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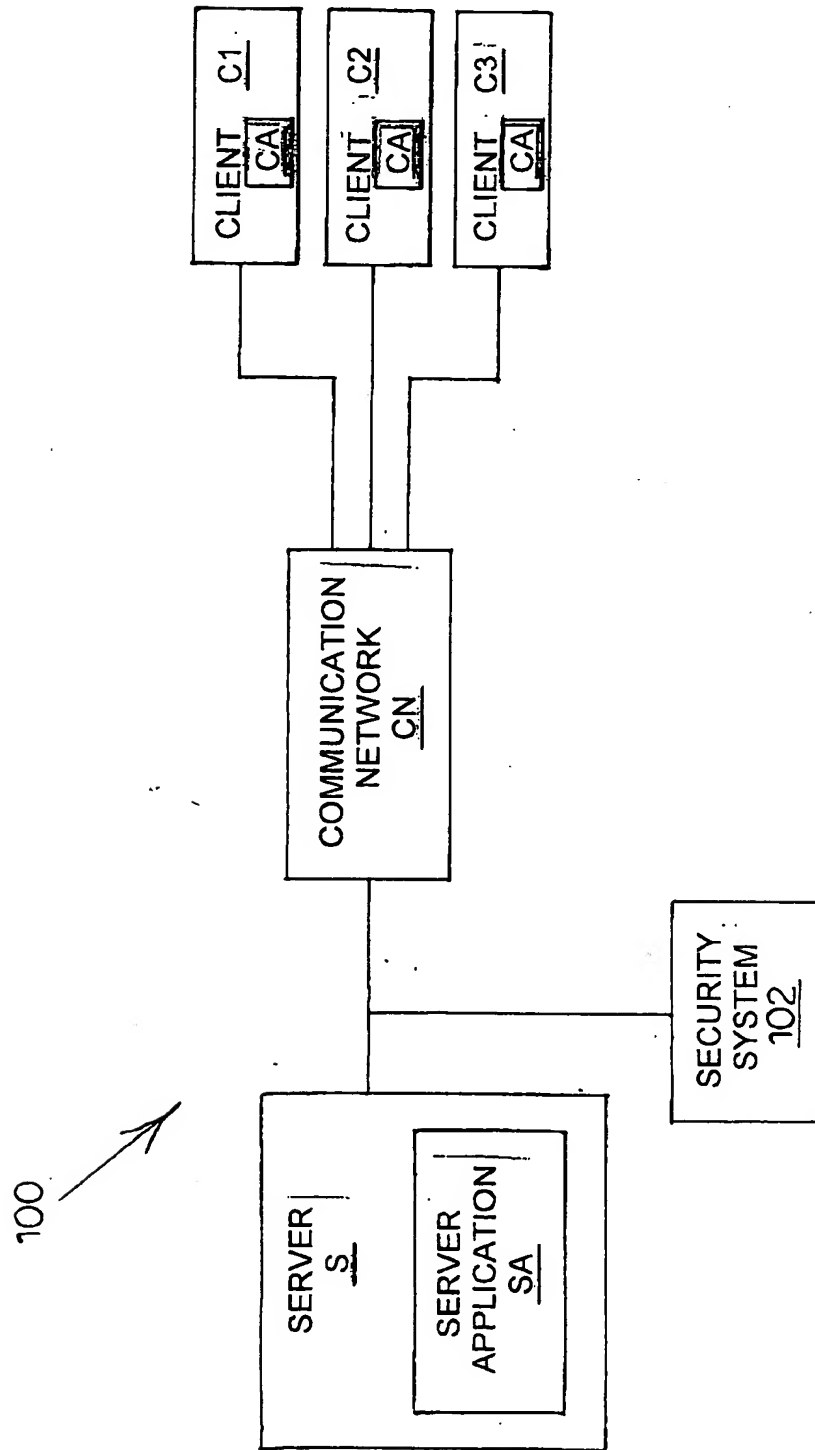


Fig. 1A

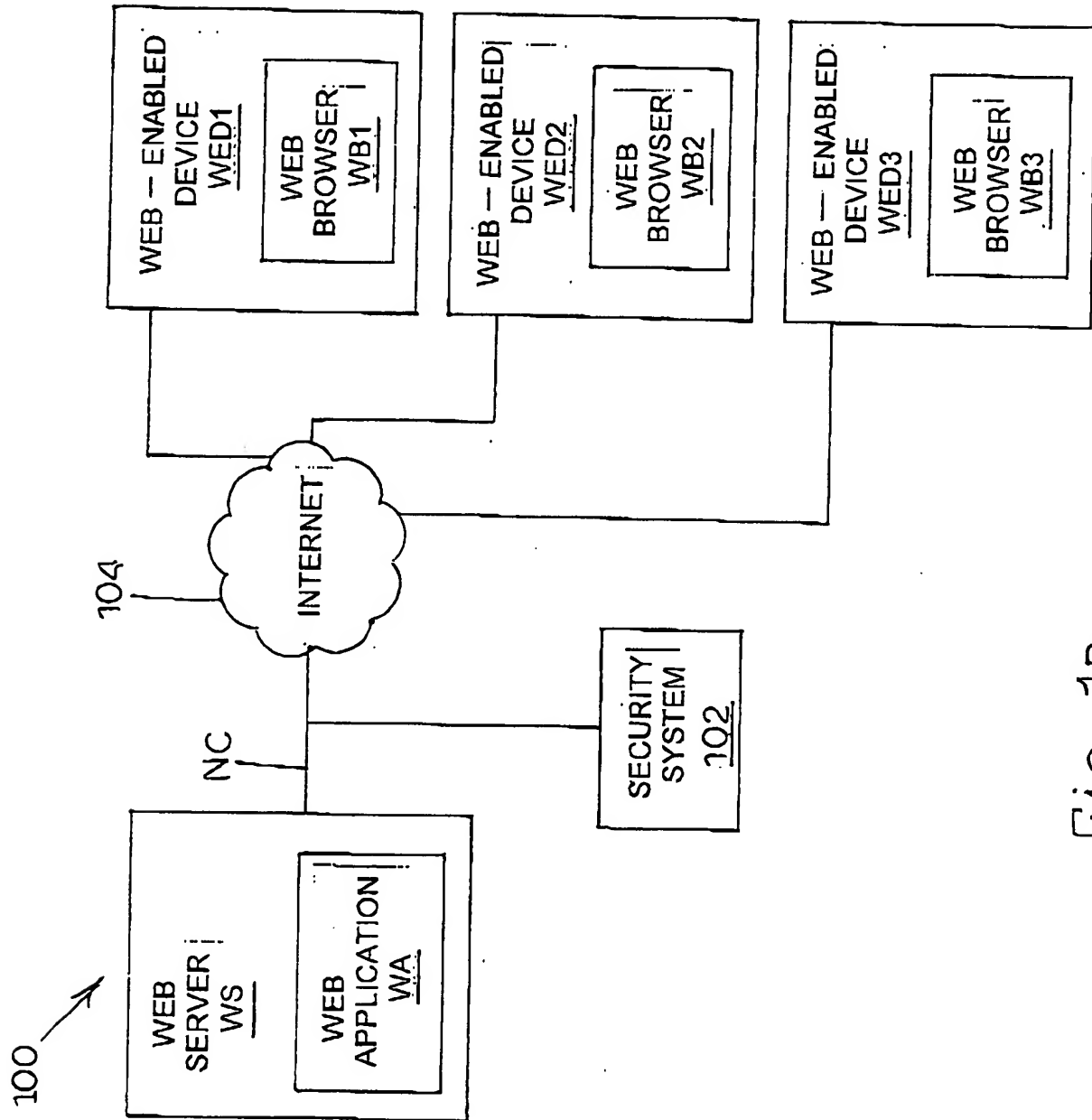


Fig. 1B

FIG. 2

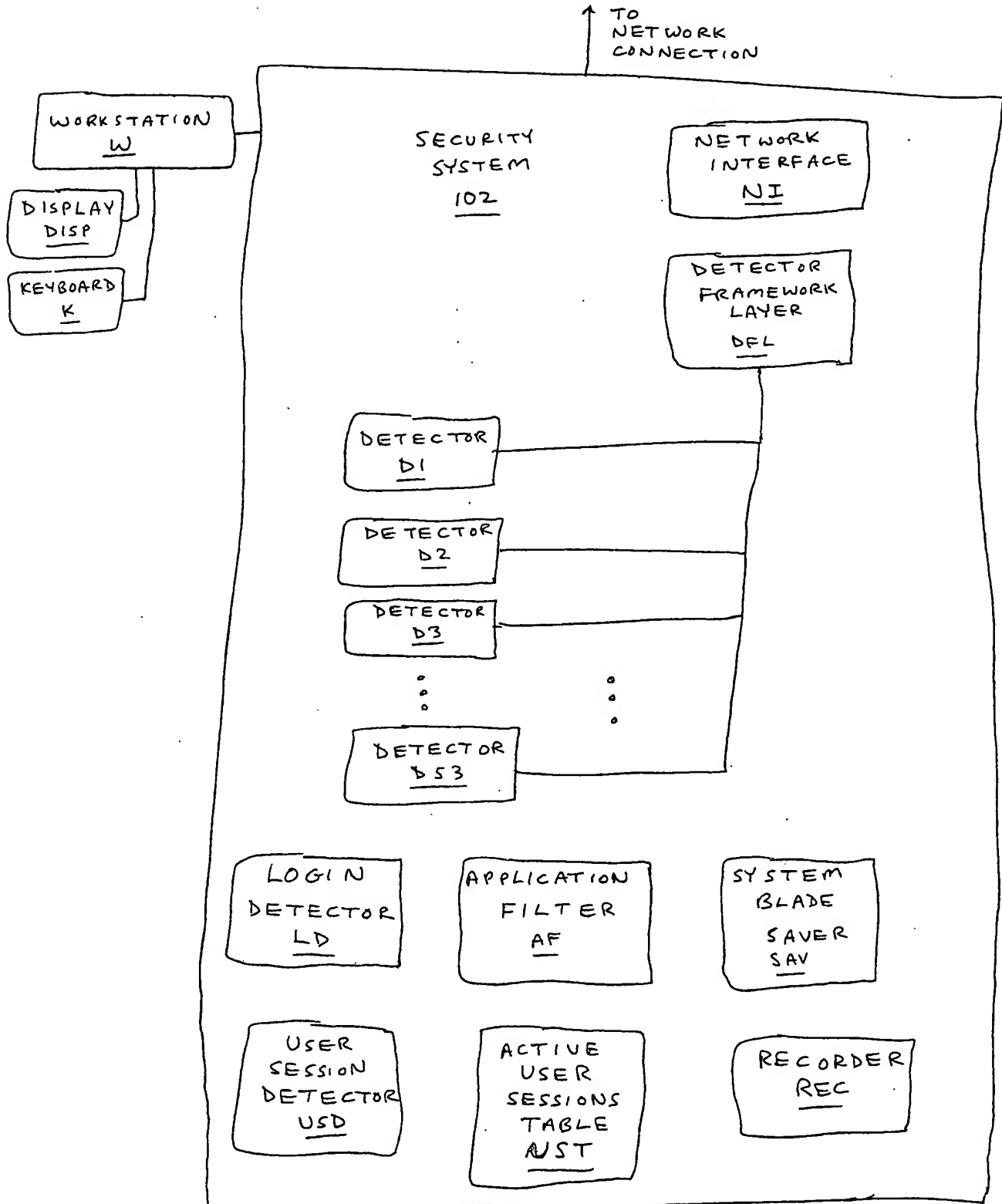


FIG. 3

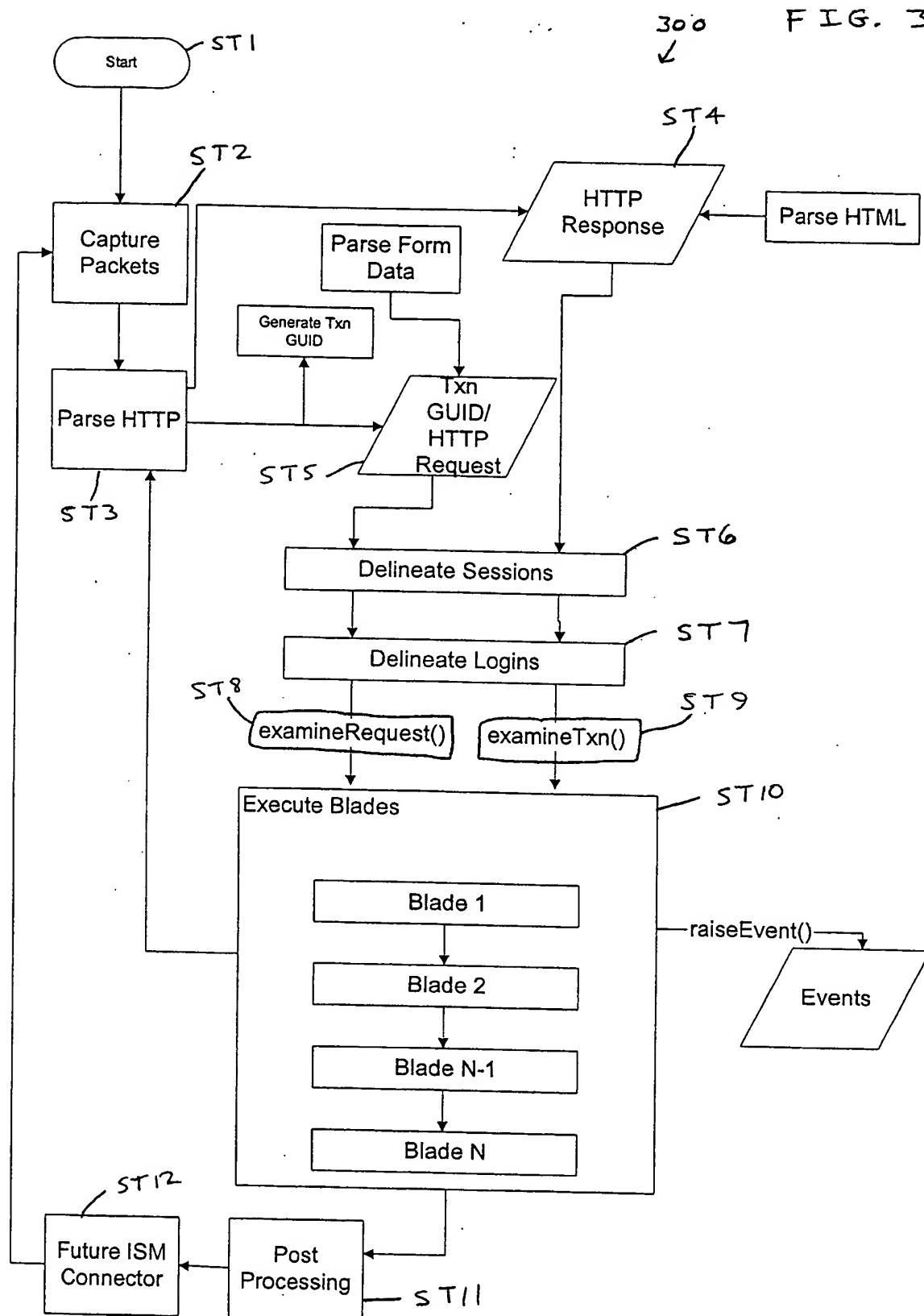


FIG. 4

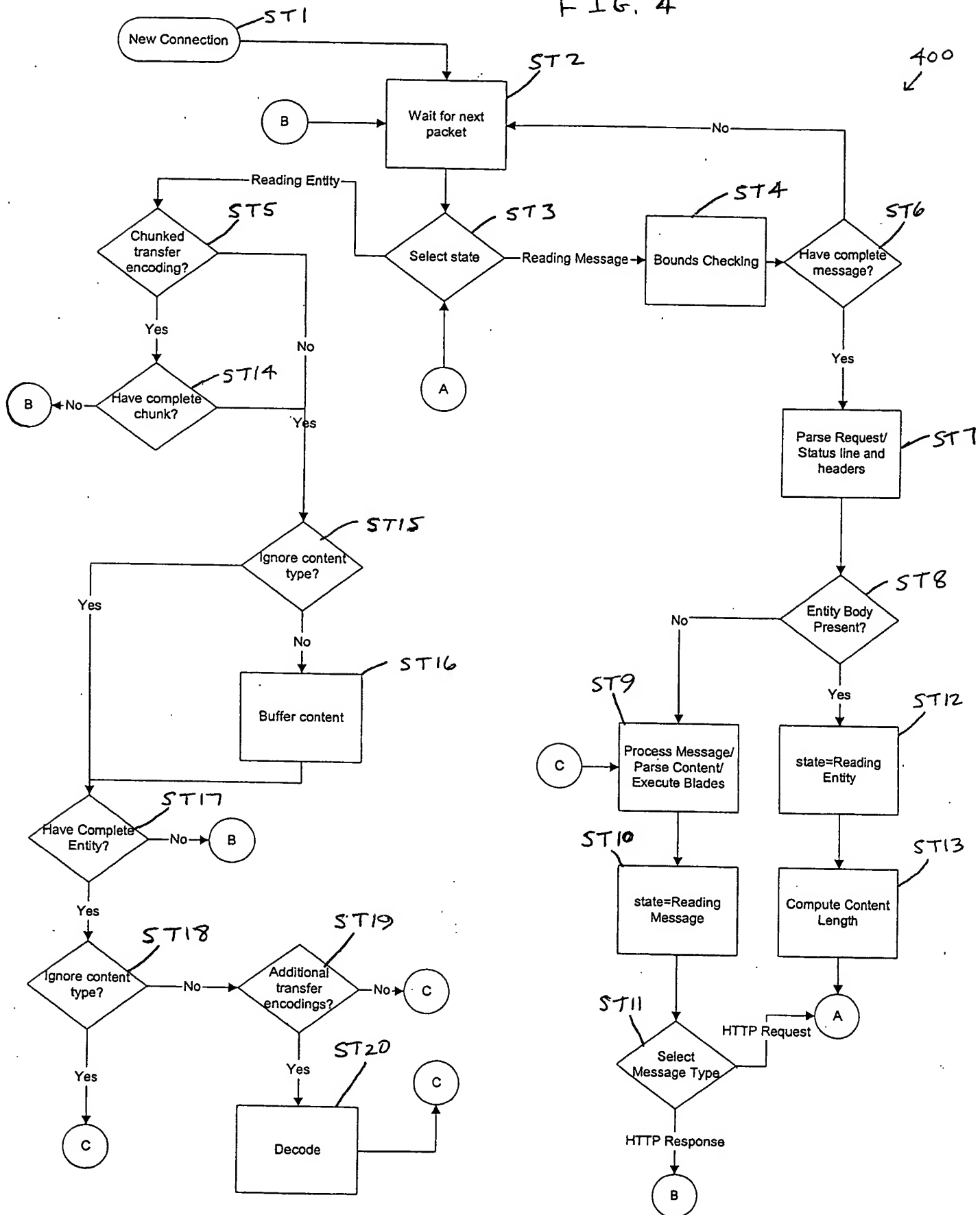
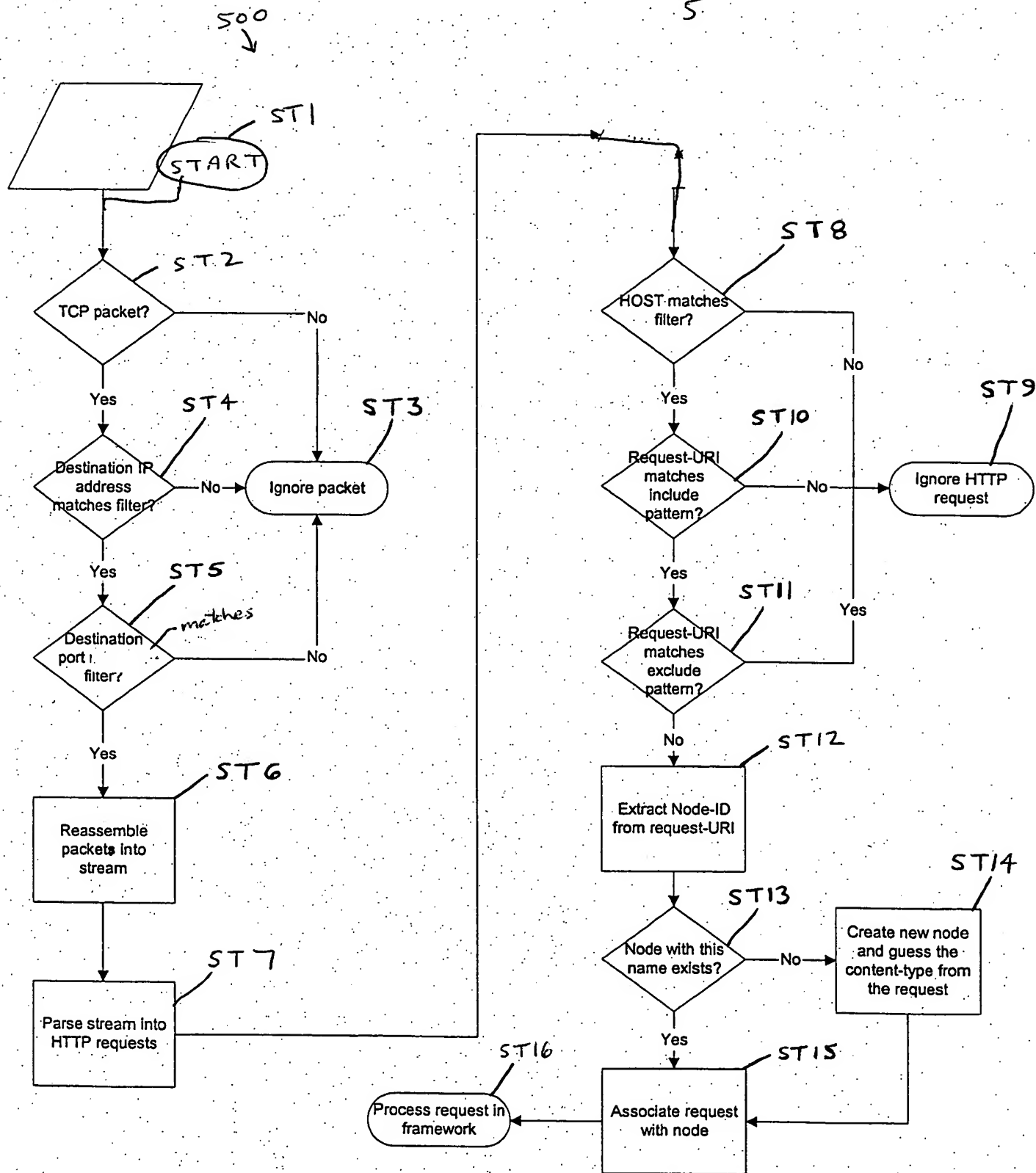
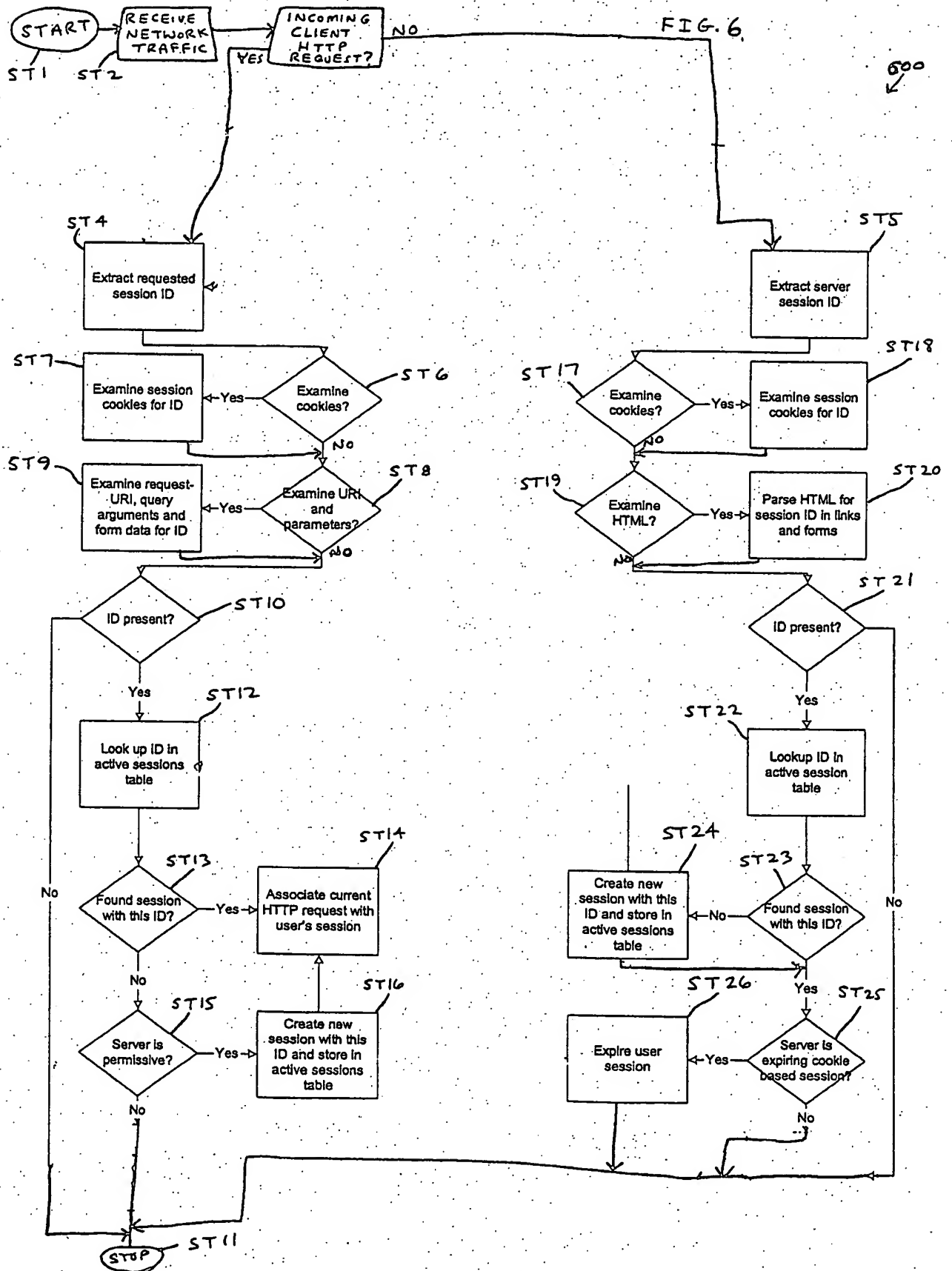
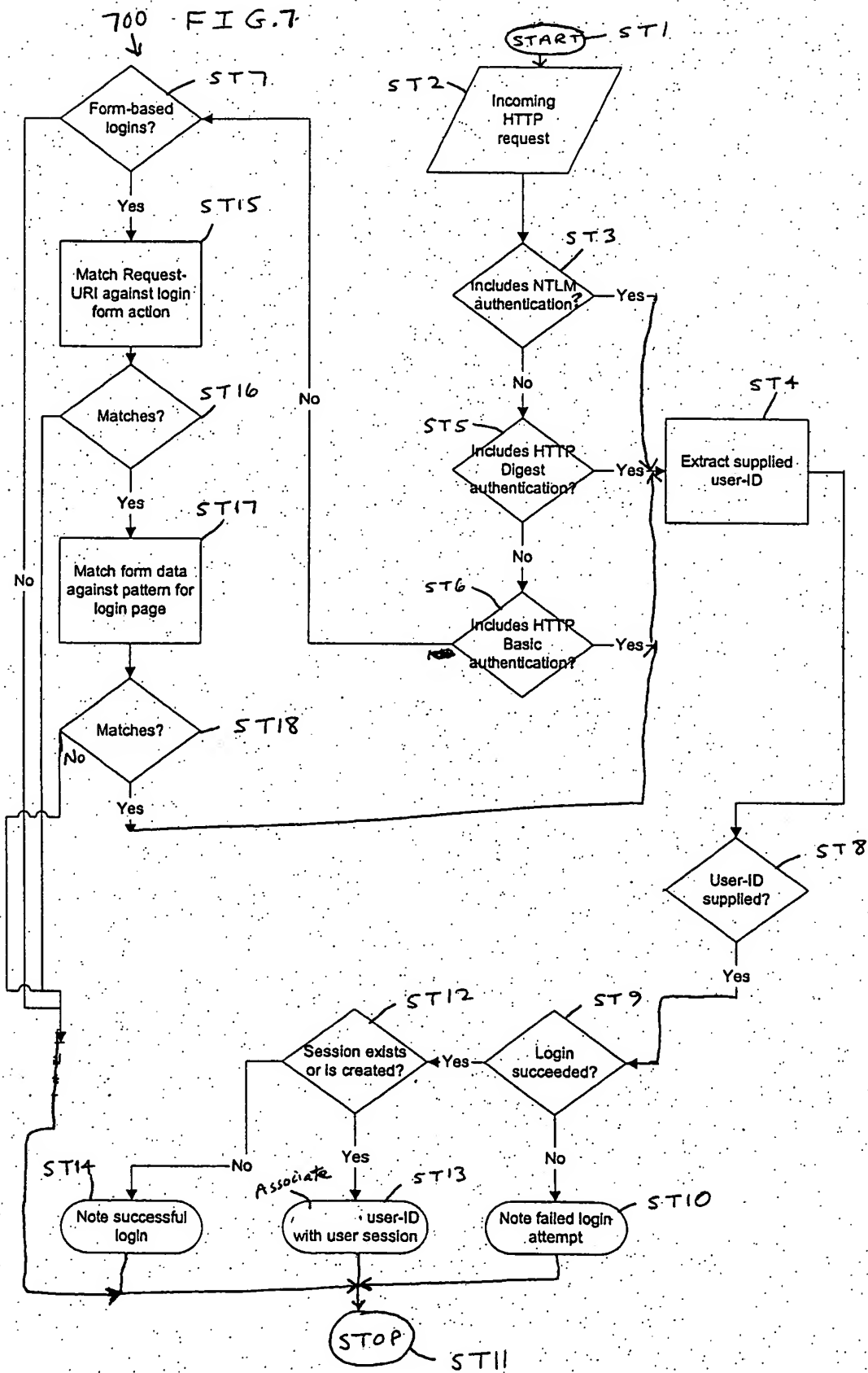


FIG.
5



Title: METHODS, SYSTEMS AND COMPUTER
PROGRAM PRODUCTS FOR
MONITORING USER BEHAVIOR FOR
A SERVER APPLICATION
Atty Docket: 1503/4/2





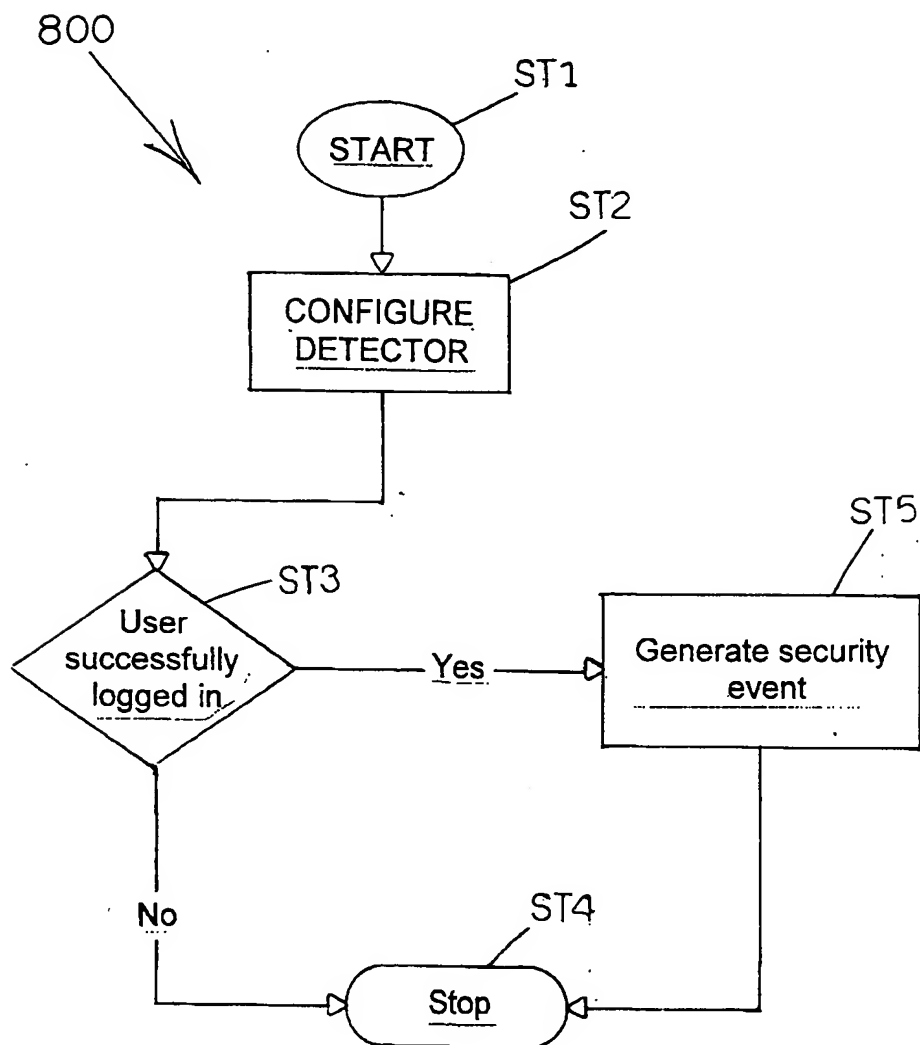


Fig. 8

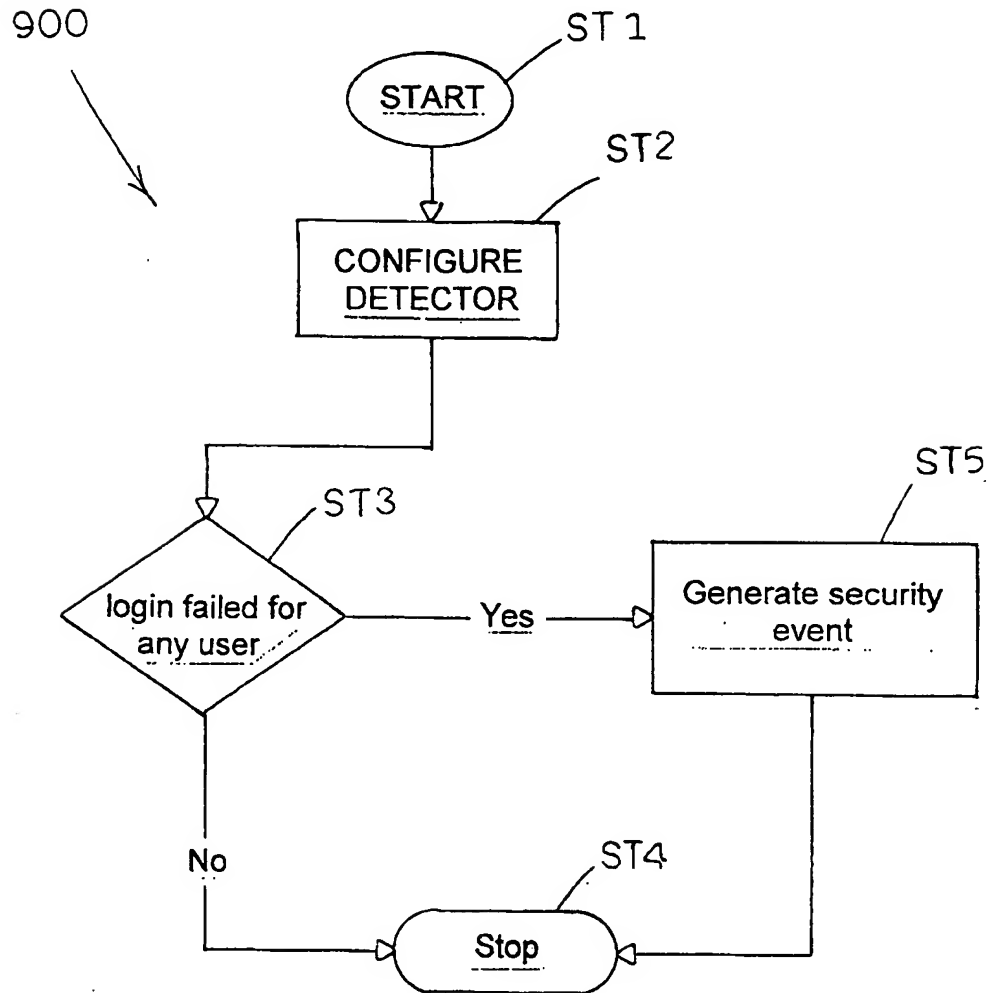


Fig. 9

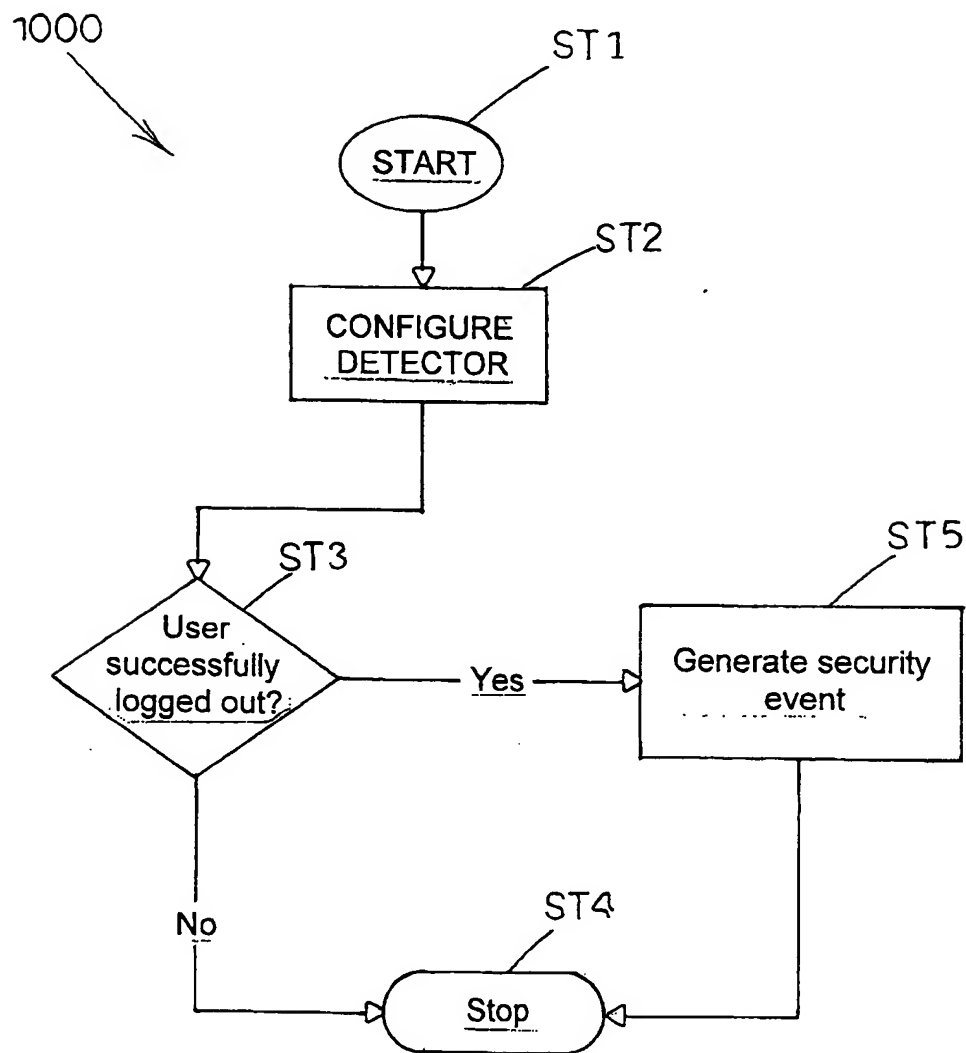


Fig. 10

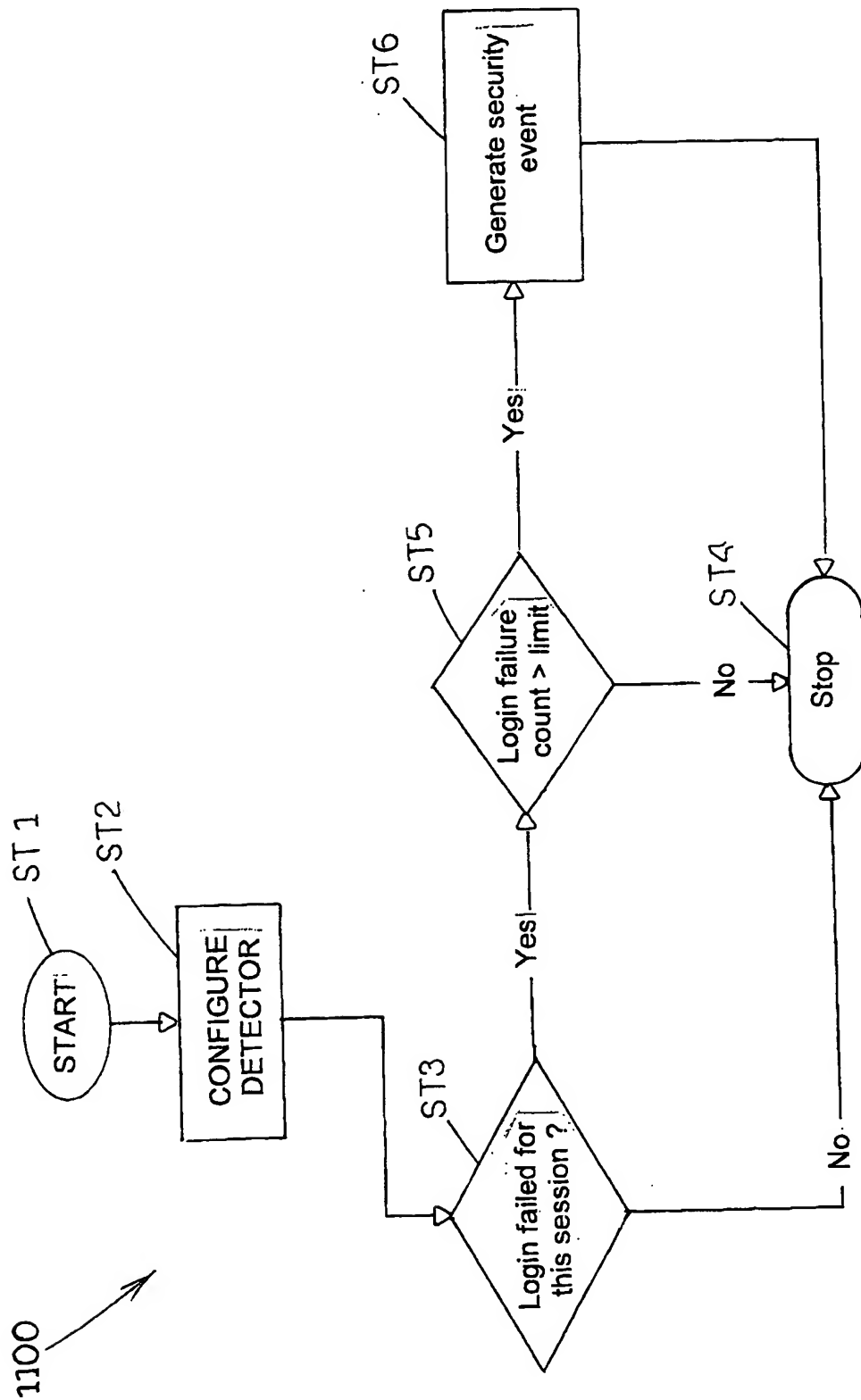


Fig. 11

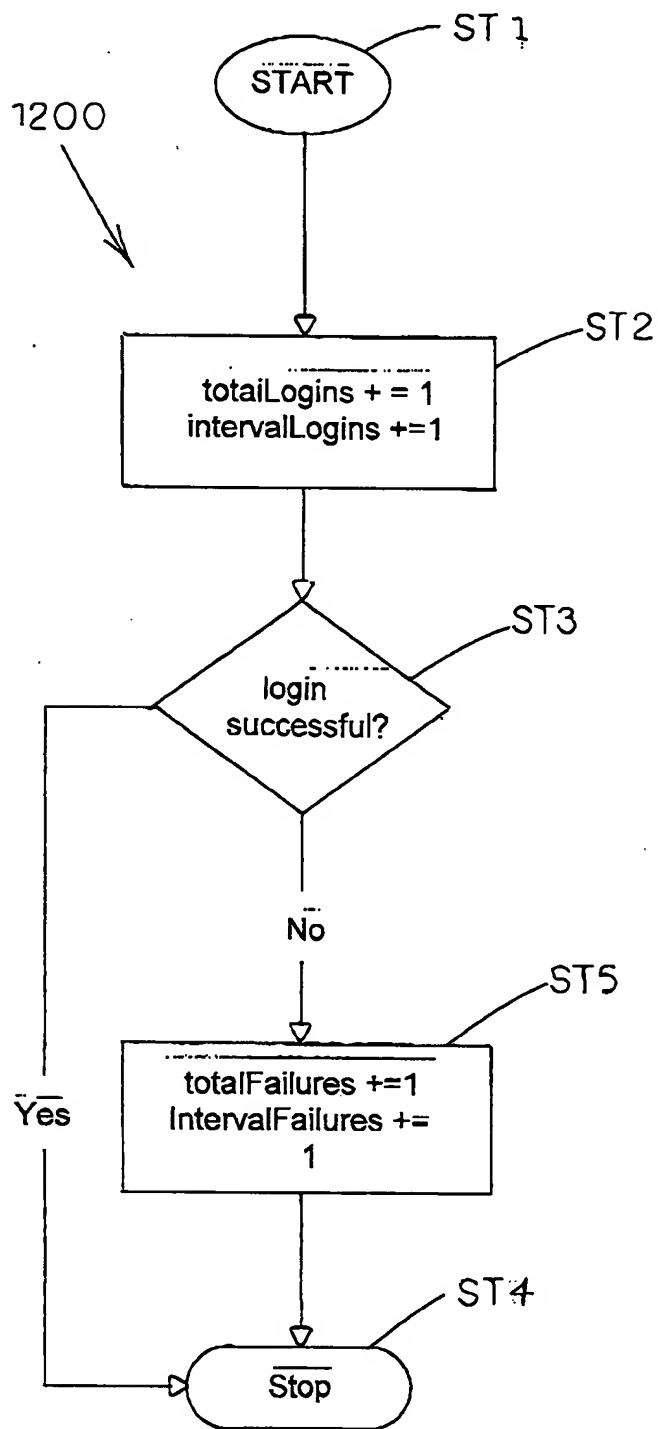


Fig. 12A

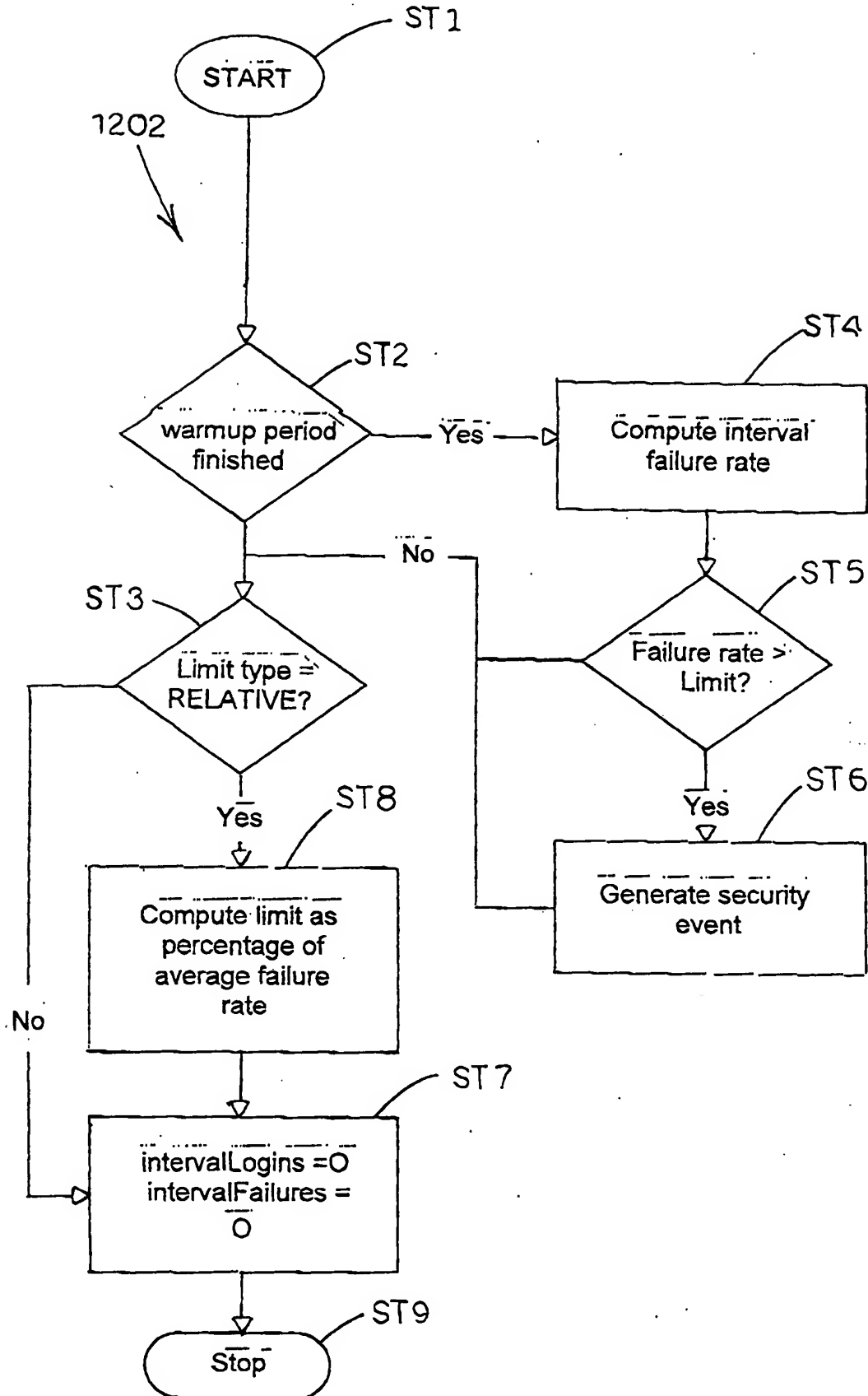


Fig. 12B

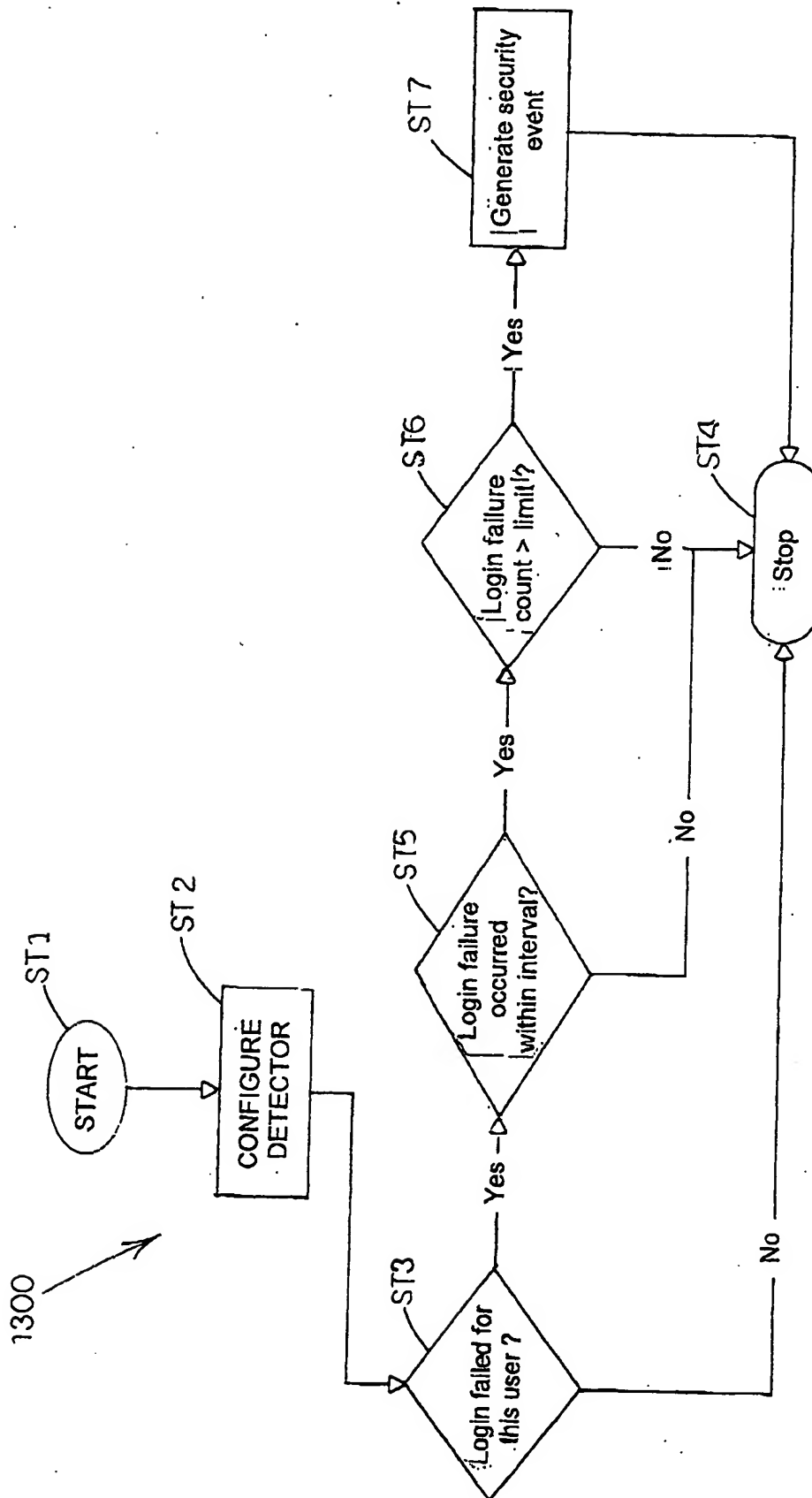


Fig. 13

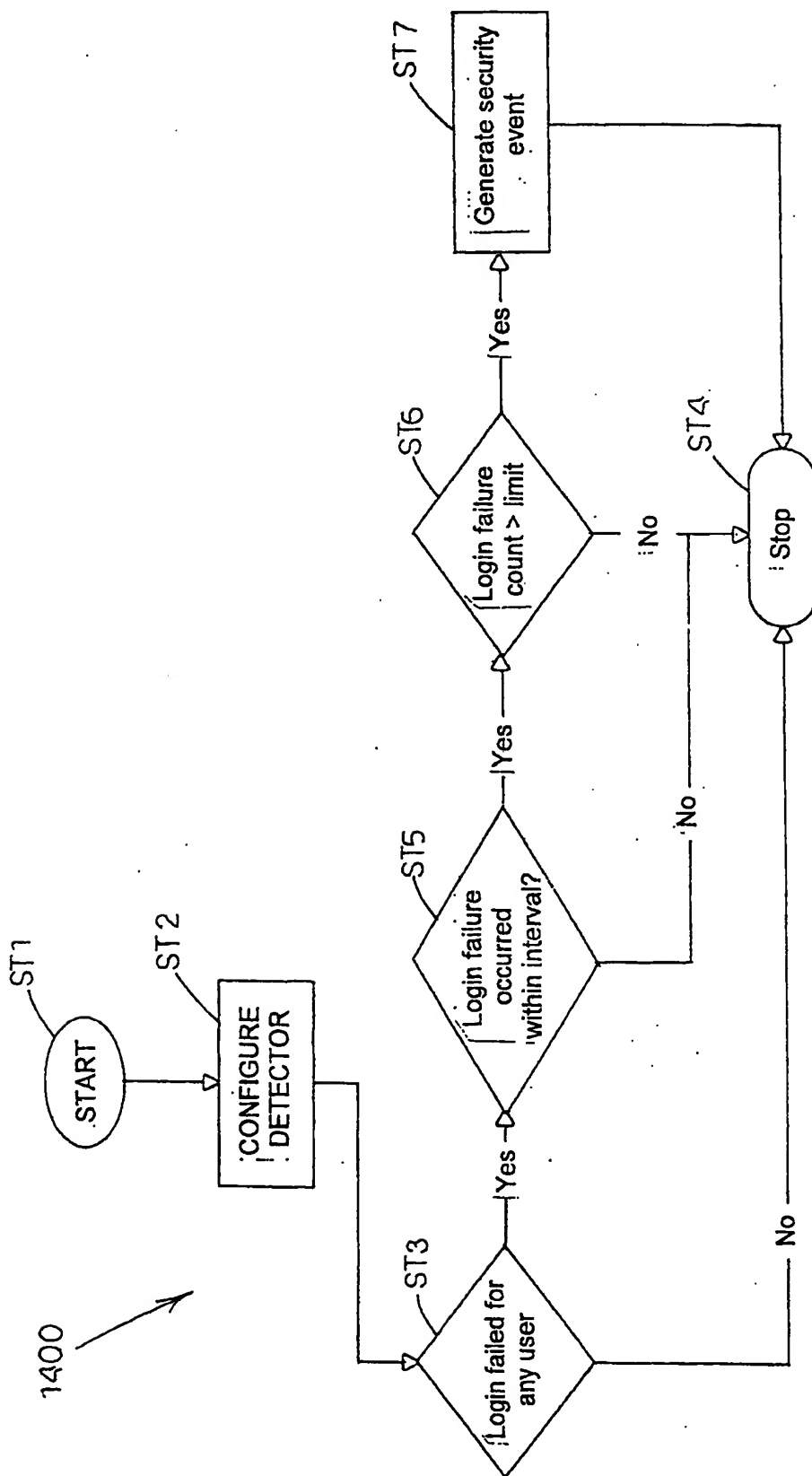


Fig. 14

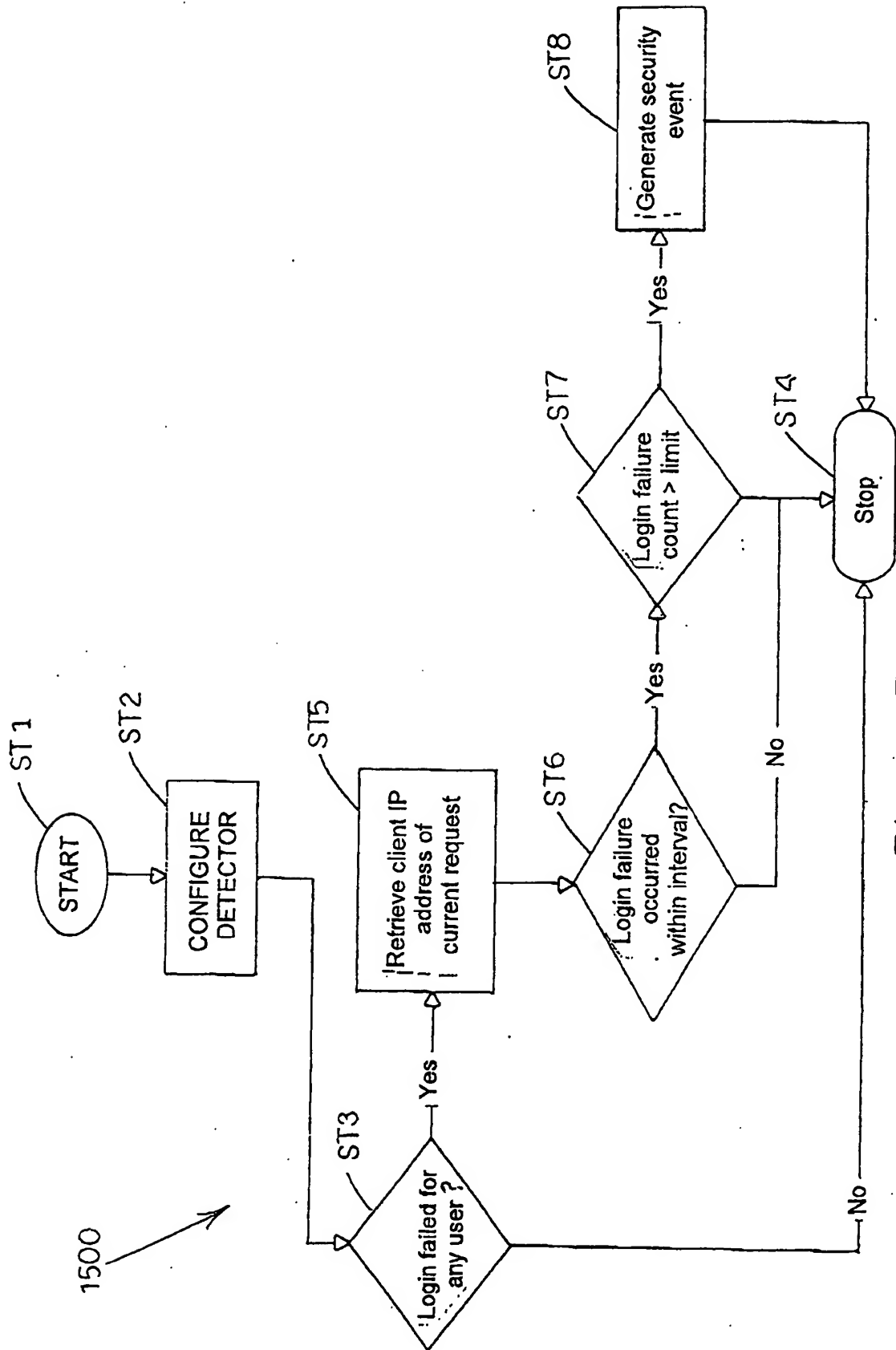
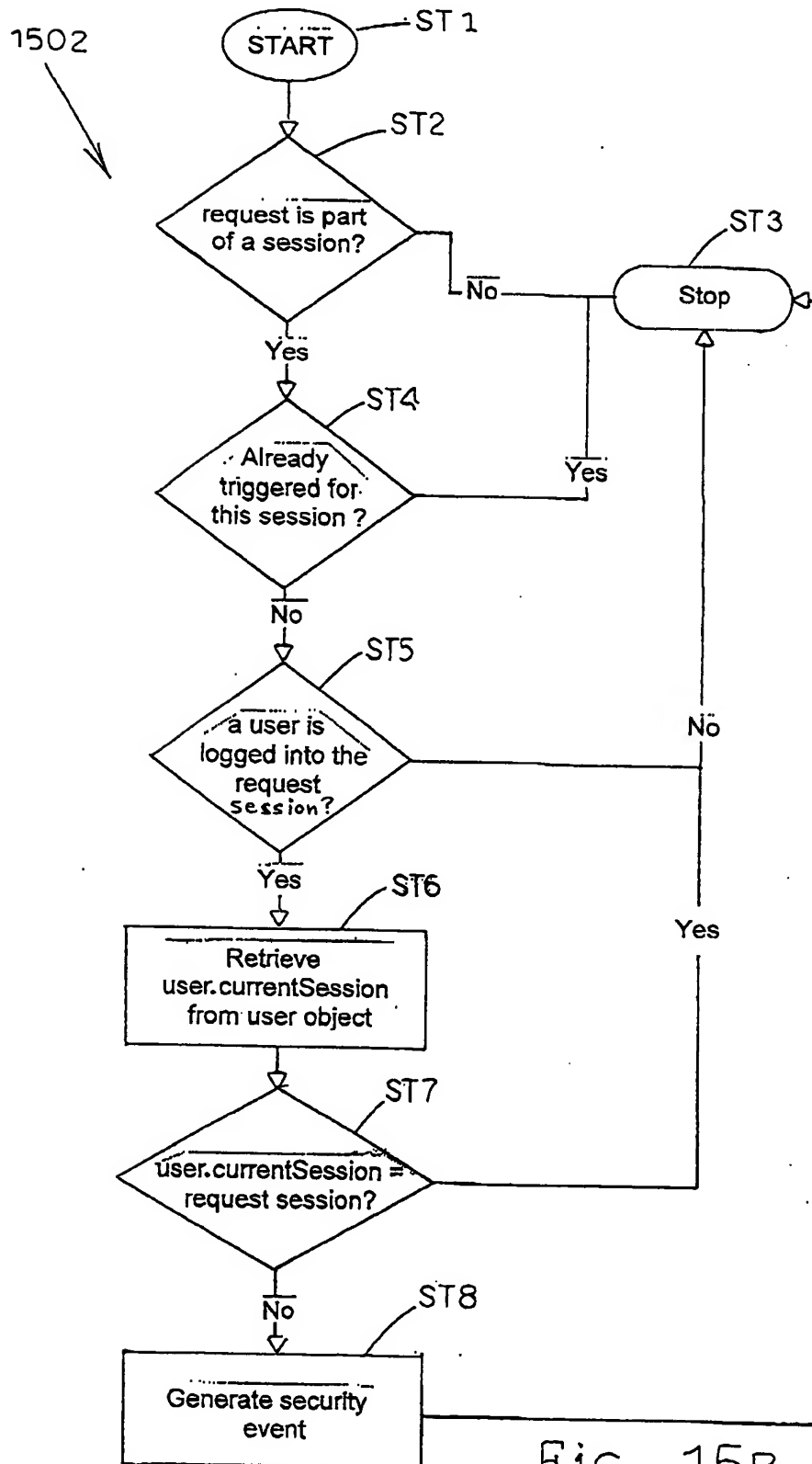


Fig. 15A



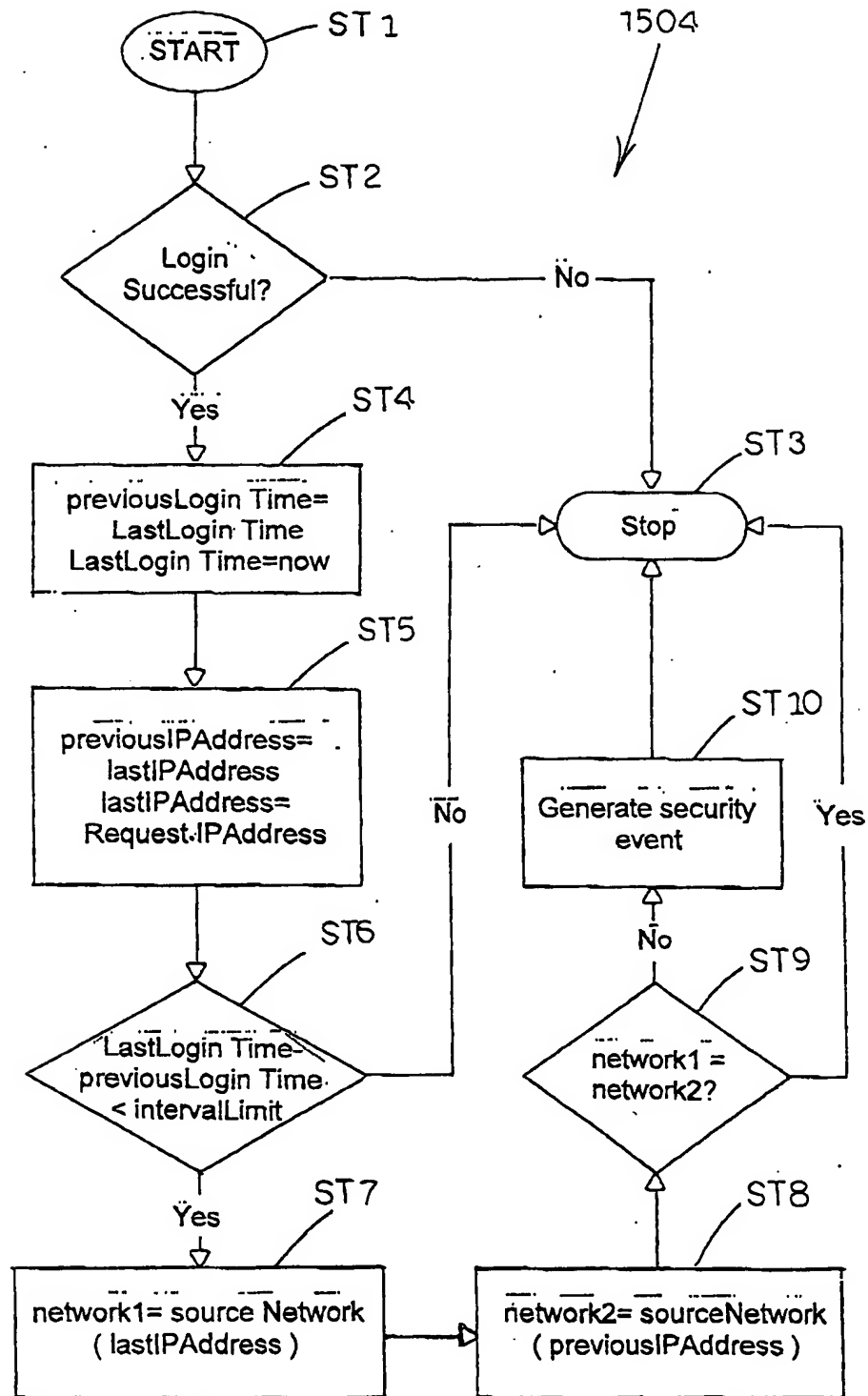
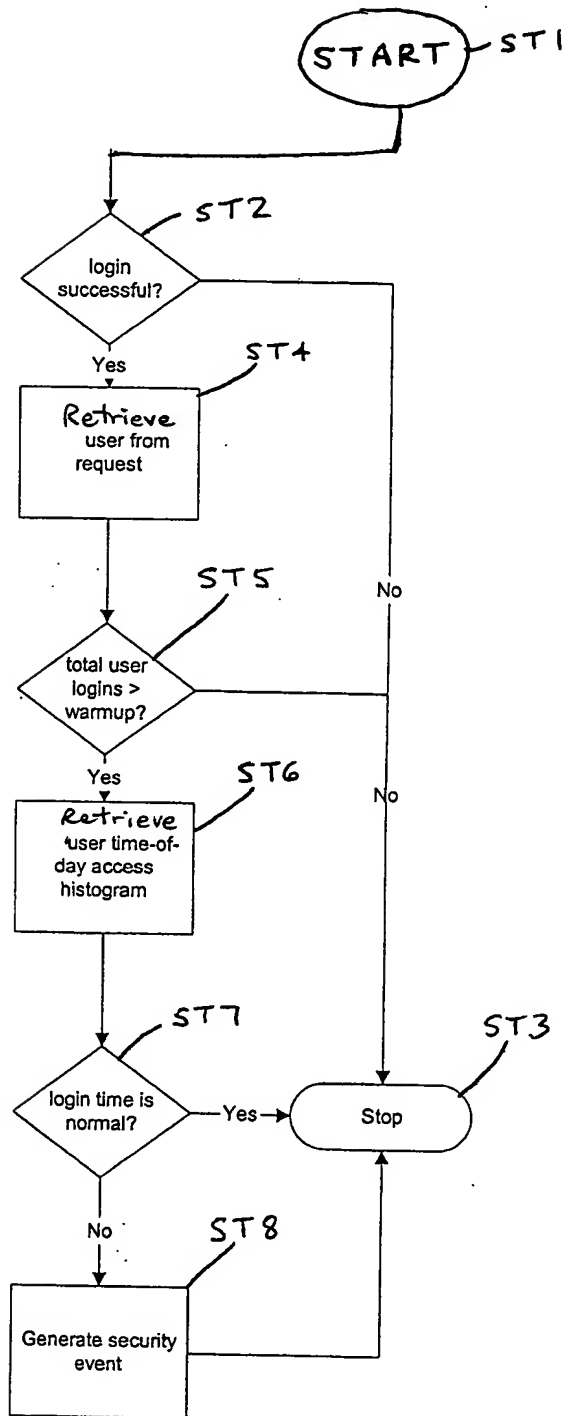


Fig. 15c

1600
↓

FIG. 16A



1602
↓

FIG. 16B

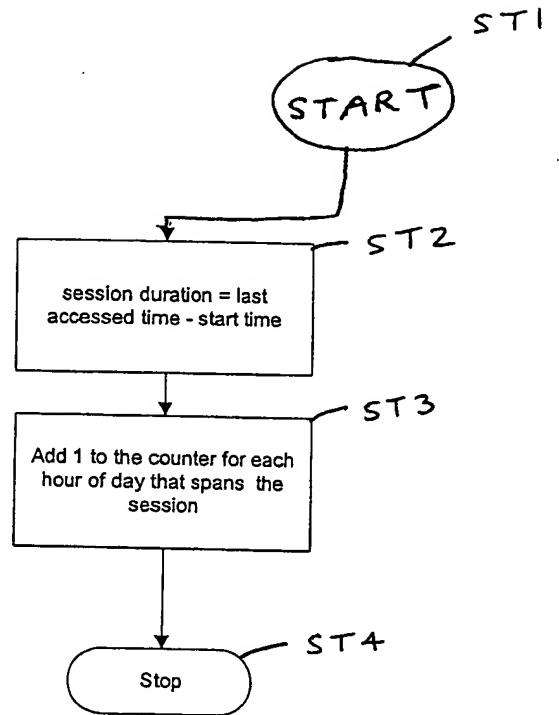


FIG. 17A

1700
↓

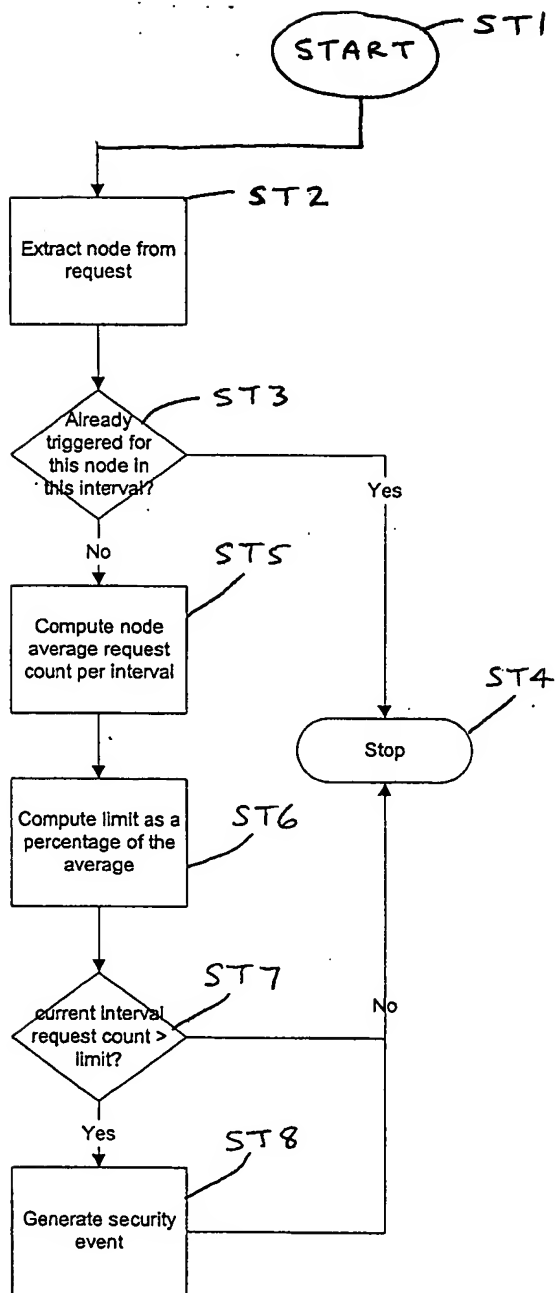


FIG. 17B

1702

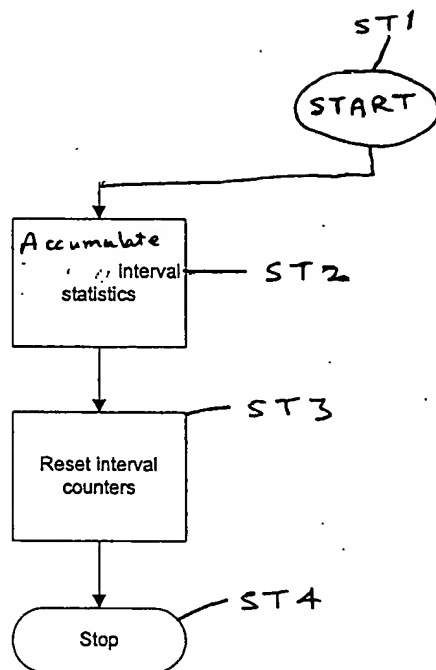


FIG. 18

1800

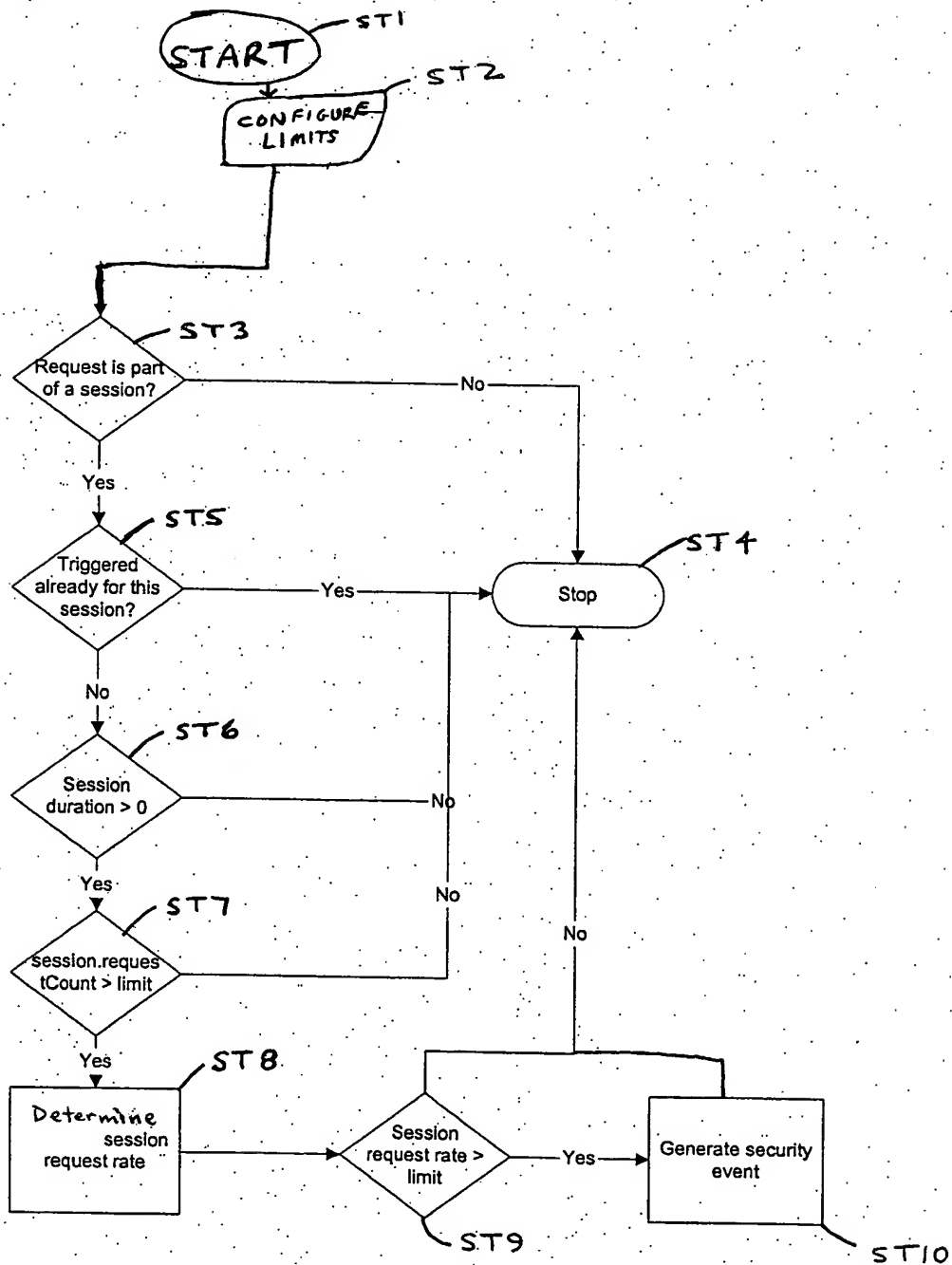


FIG. 19A

1900
↓

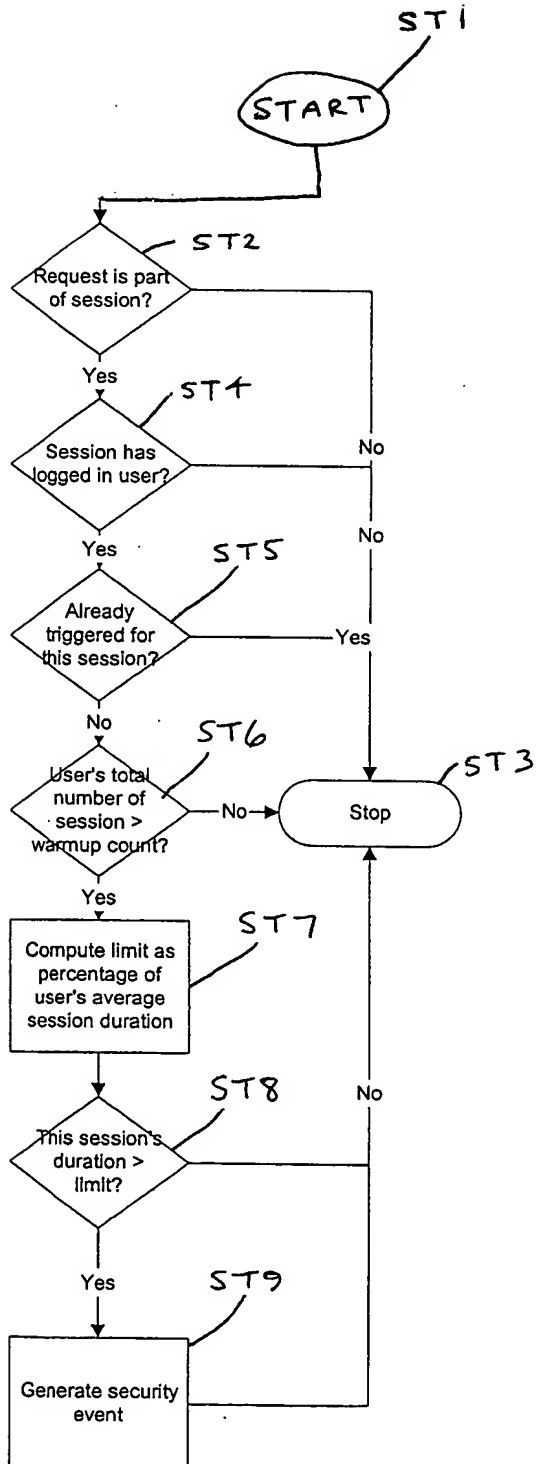


FIG. 19B

1902
↓

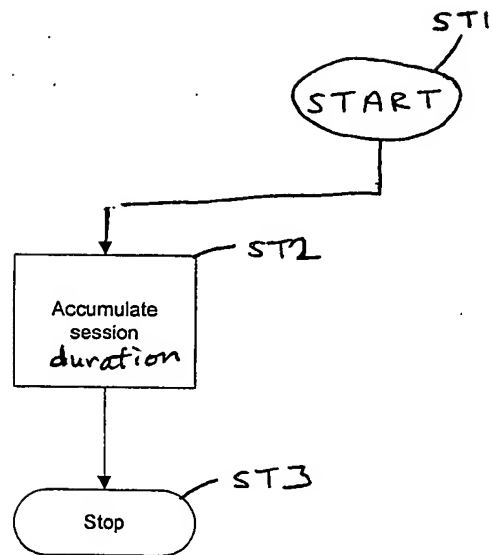


FIG. 20A

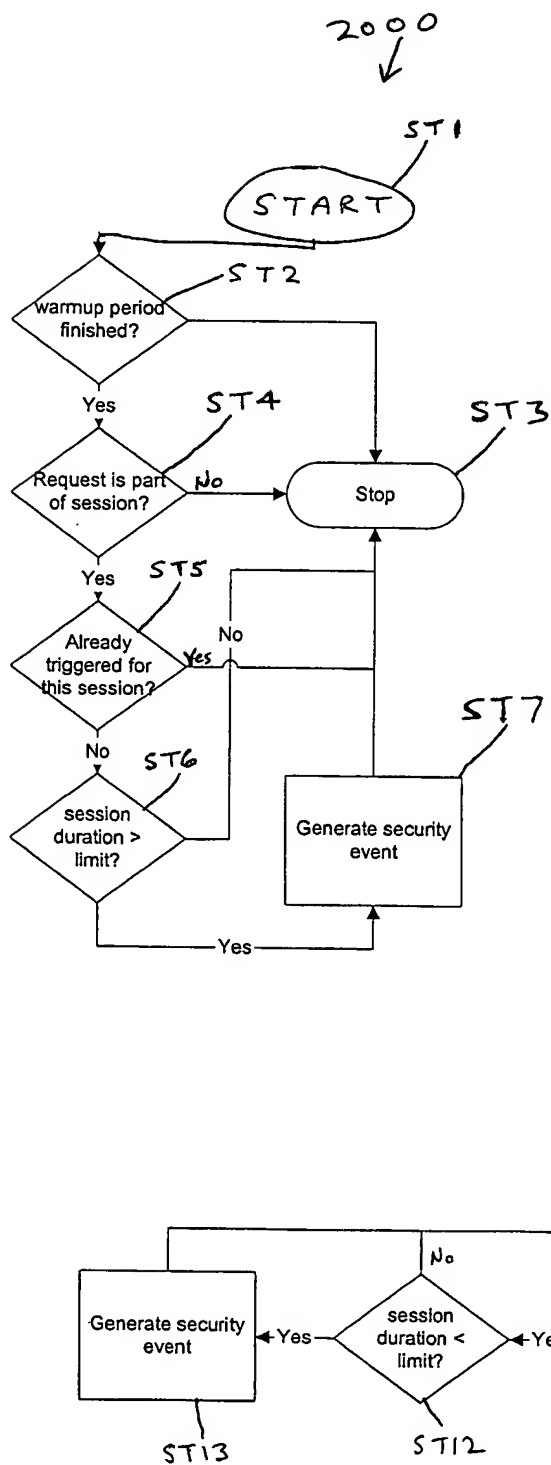
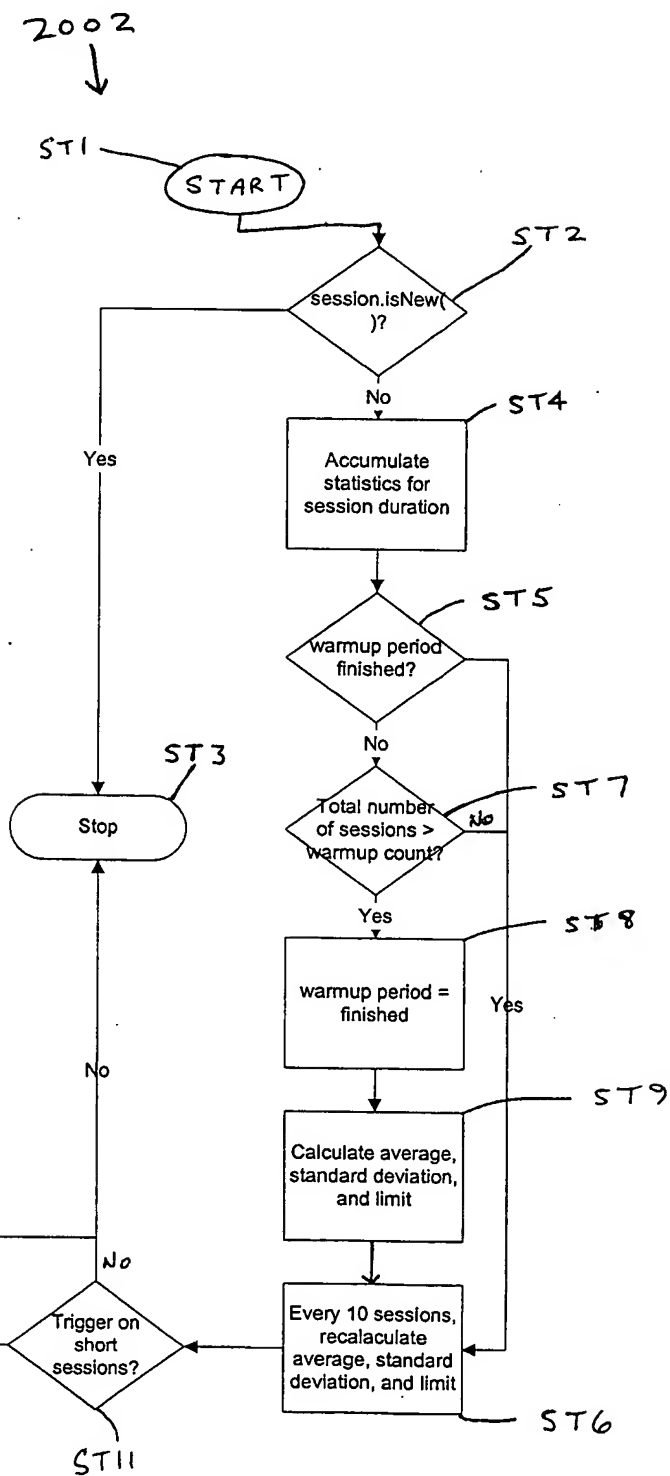


FIG. 20B



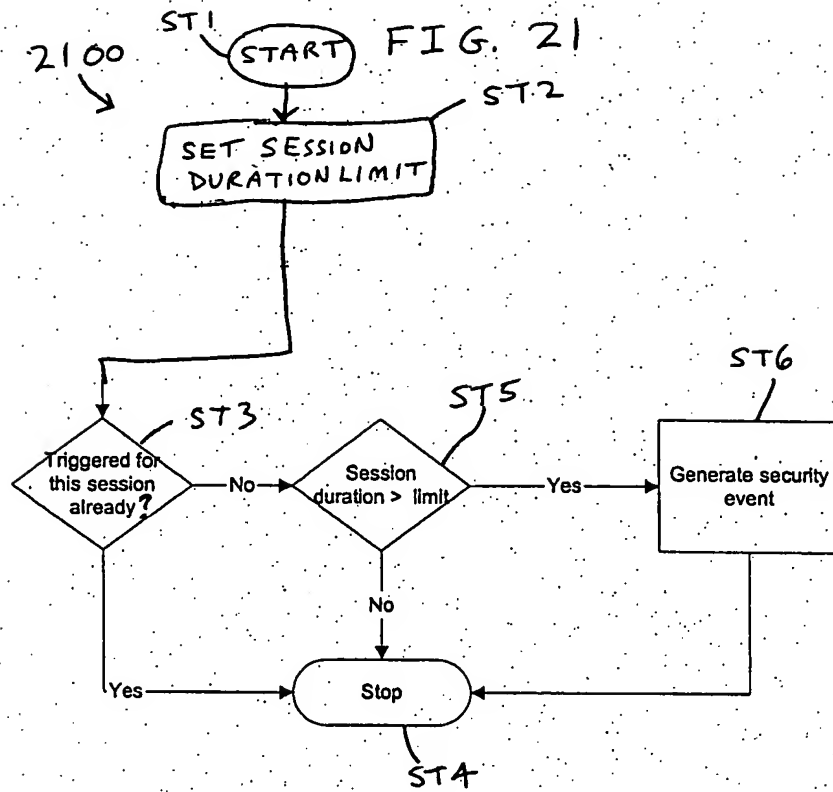


FIG. 22A

2200
↓

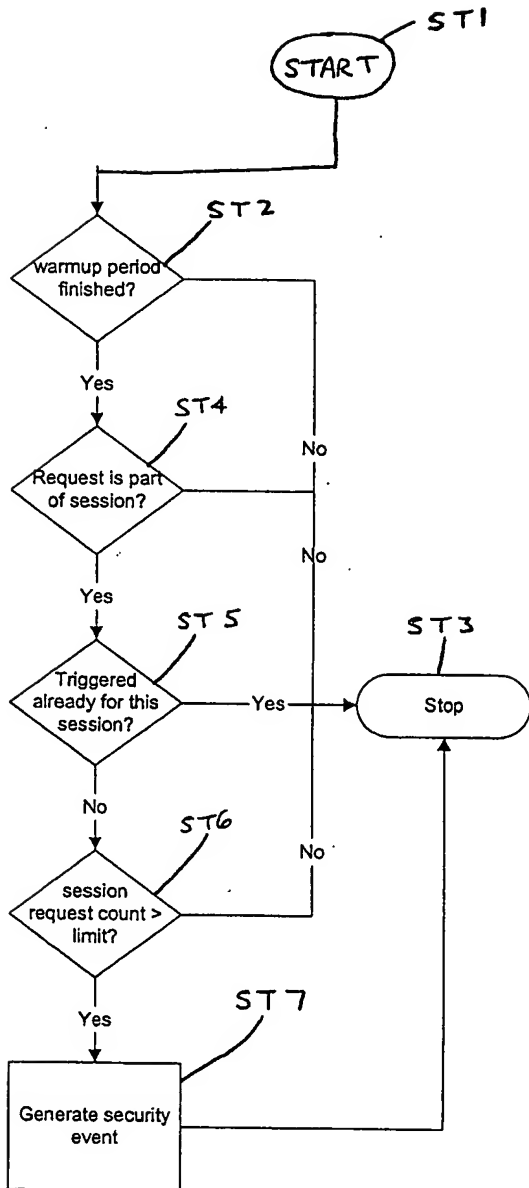


FIG. 22B

2202
↓

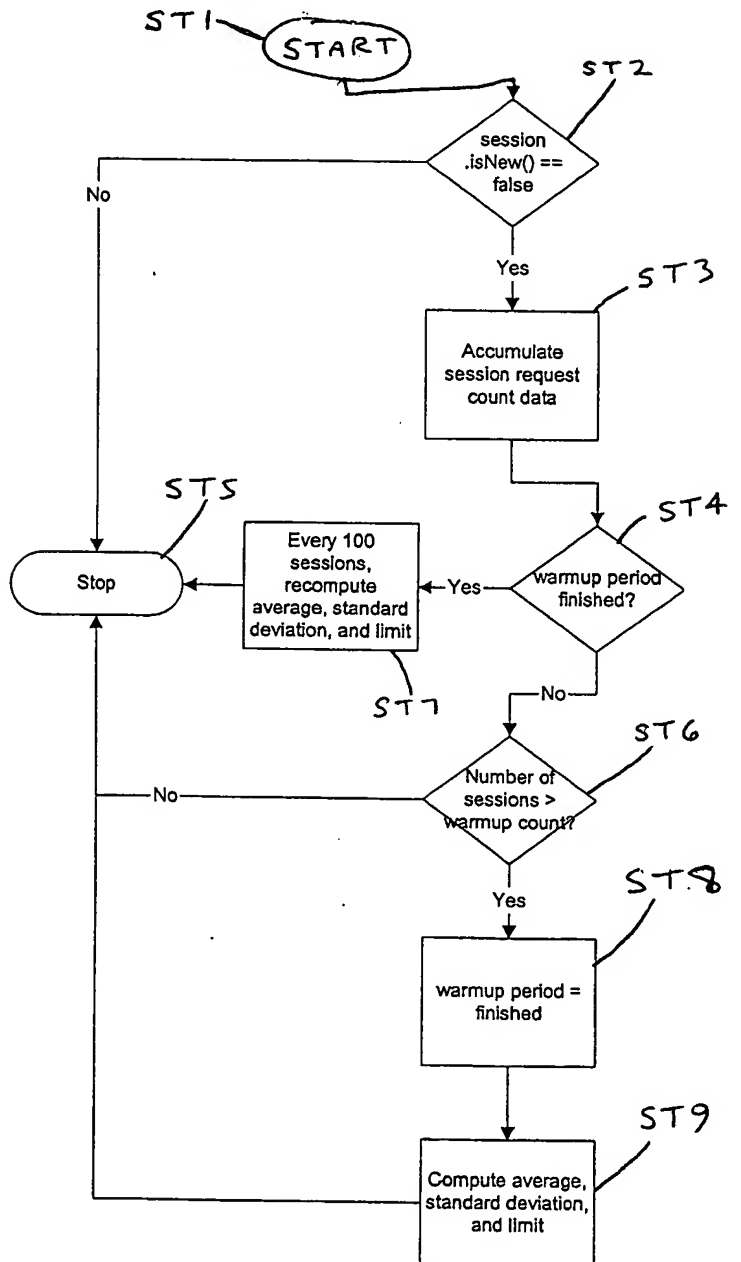


FIG. 23A

2300
↓

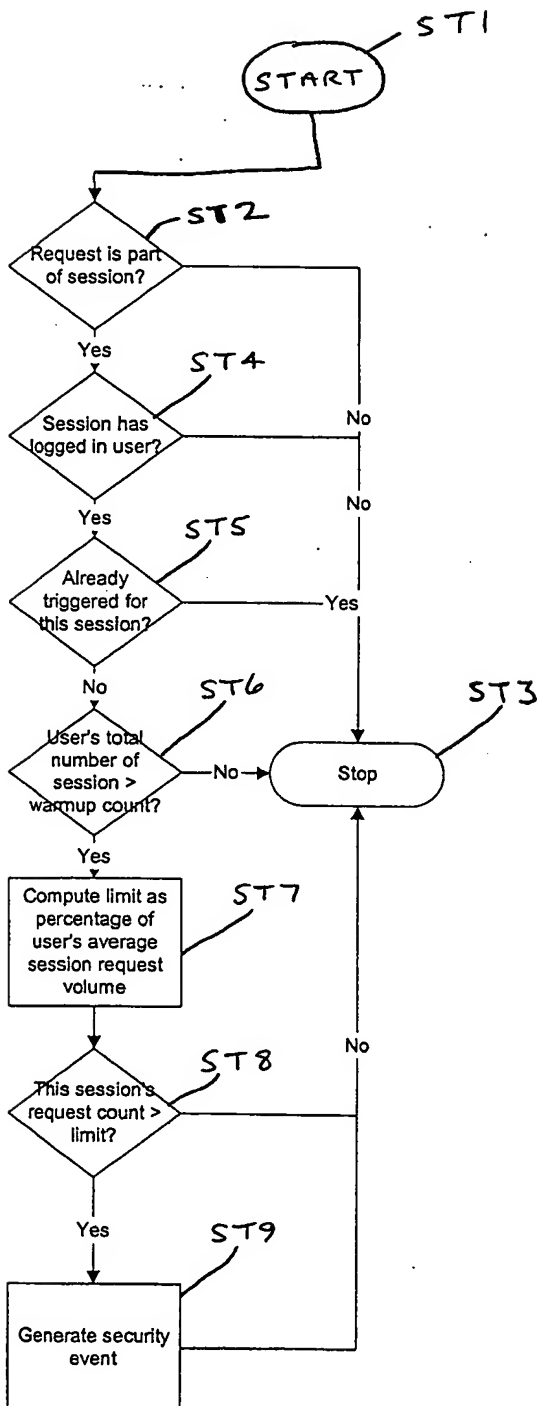


FIG. 23B

2302
↓

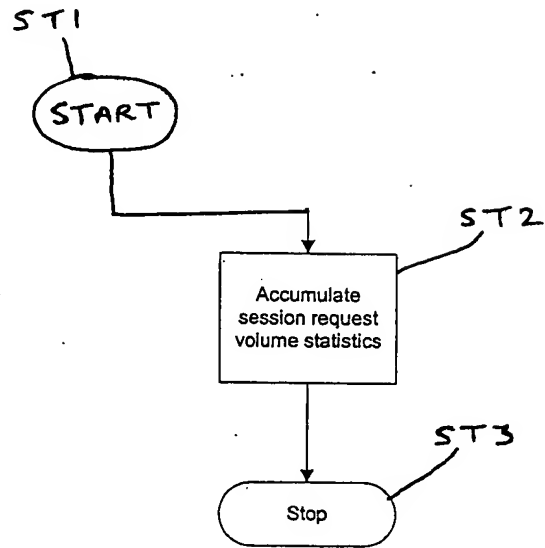


FIG. 24

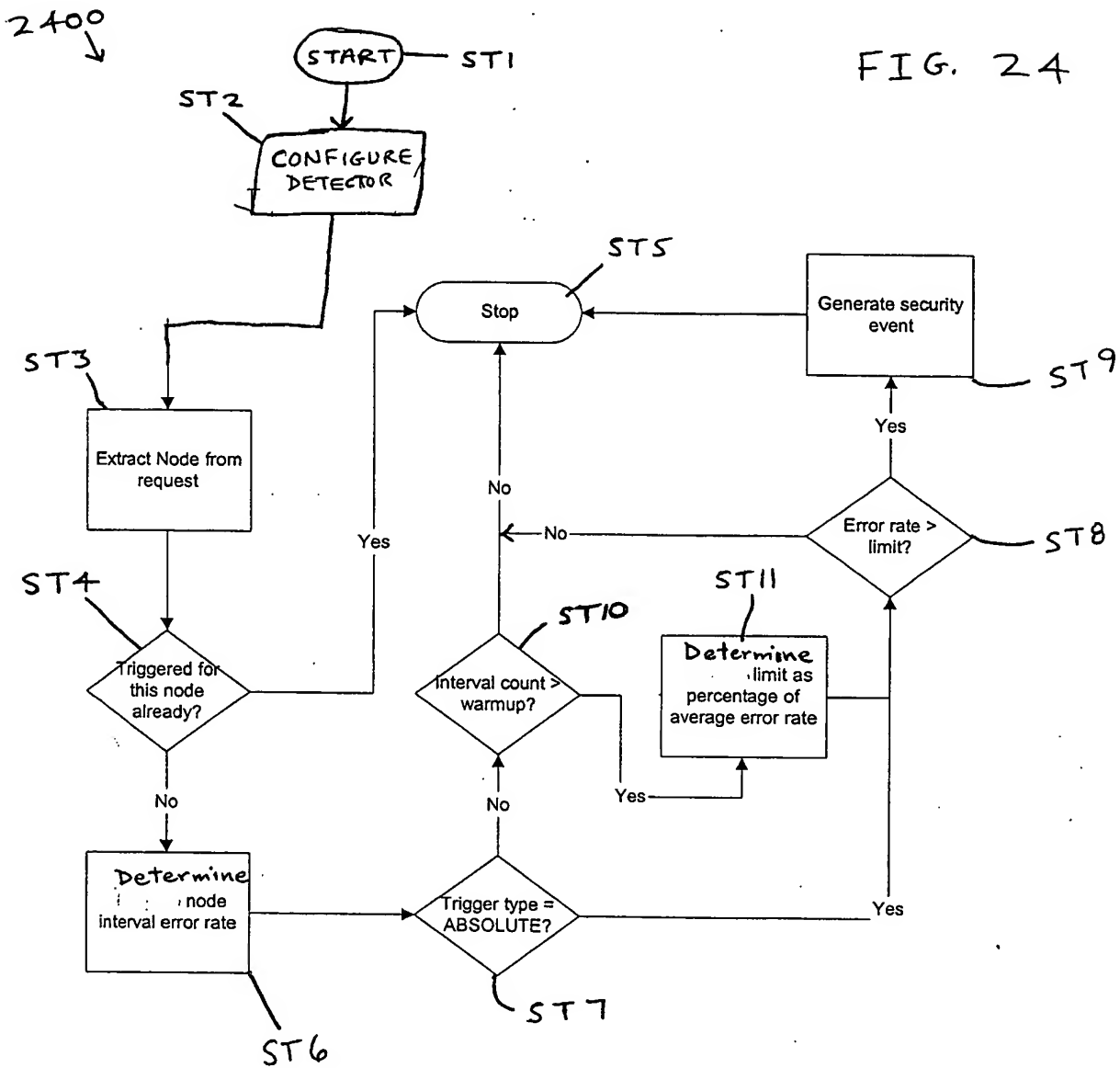
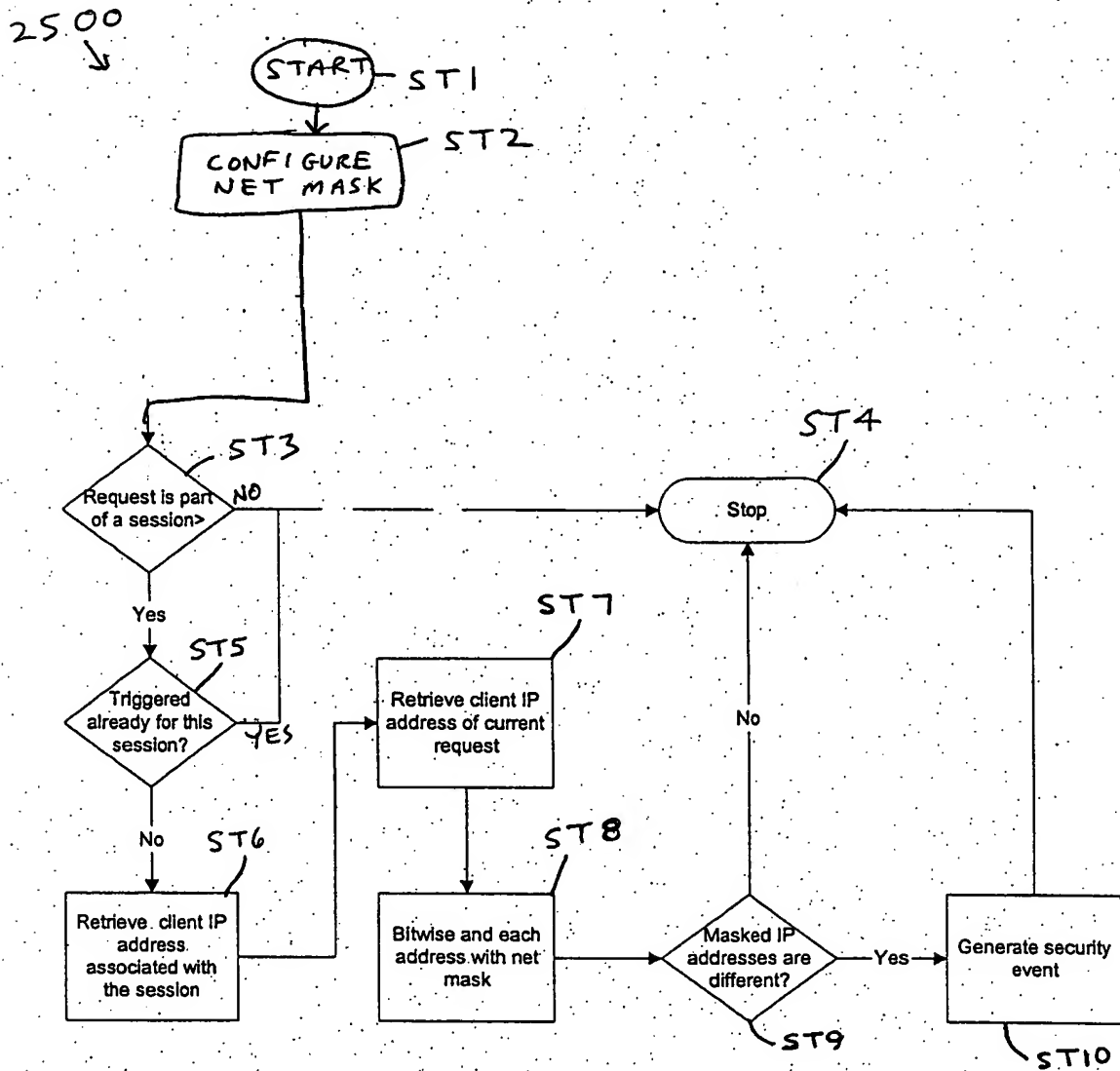


FIG. 25



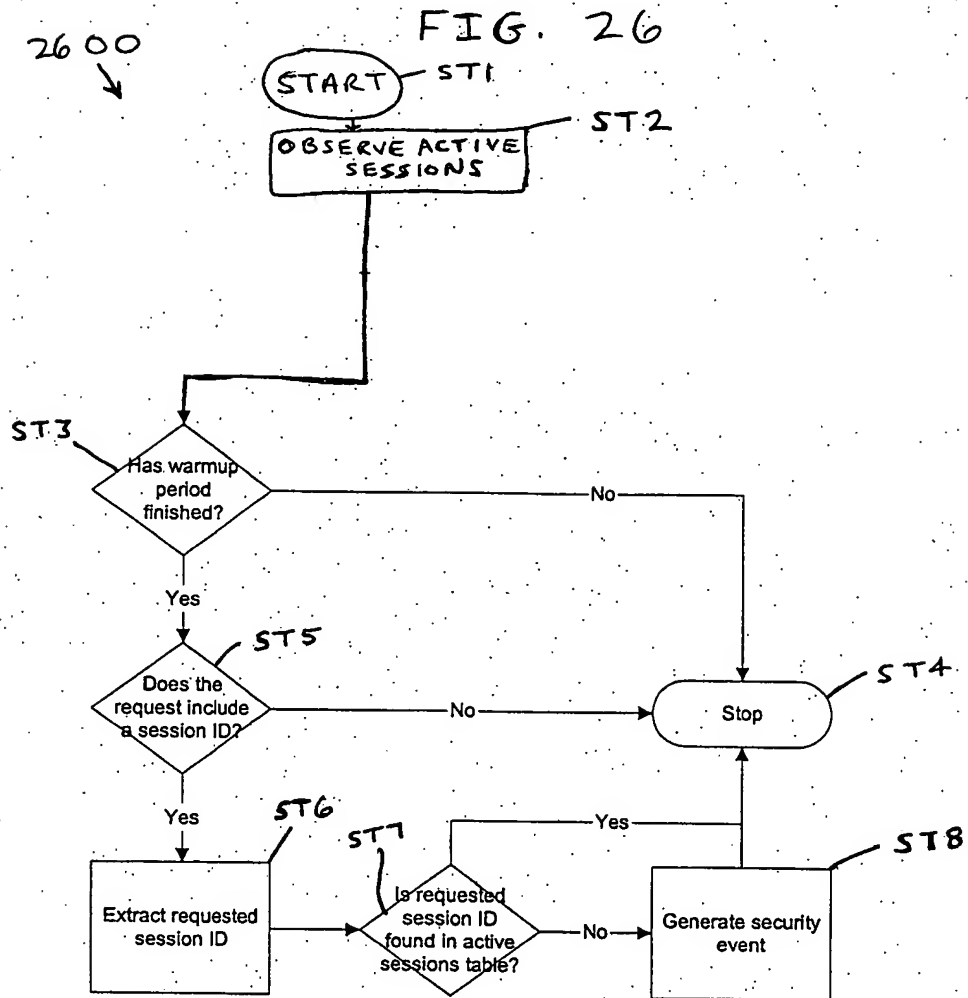
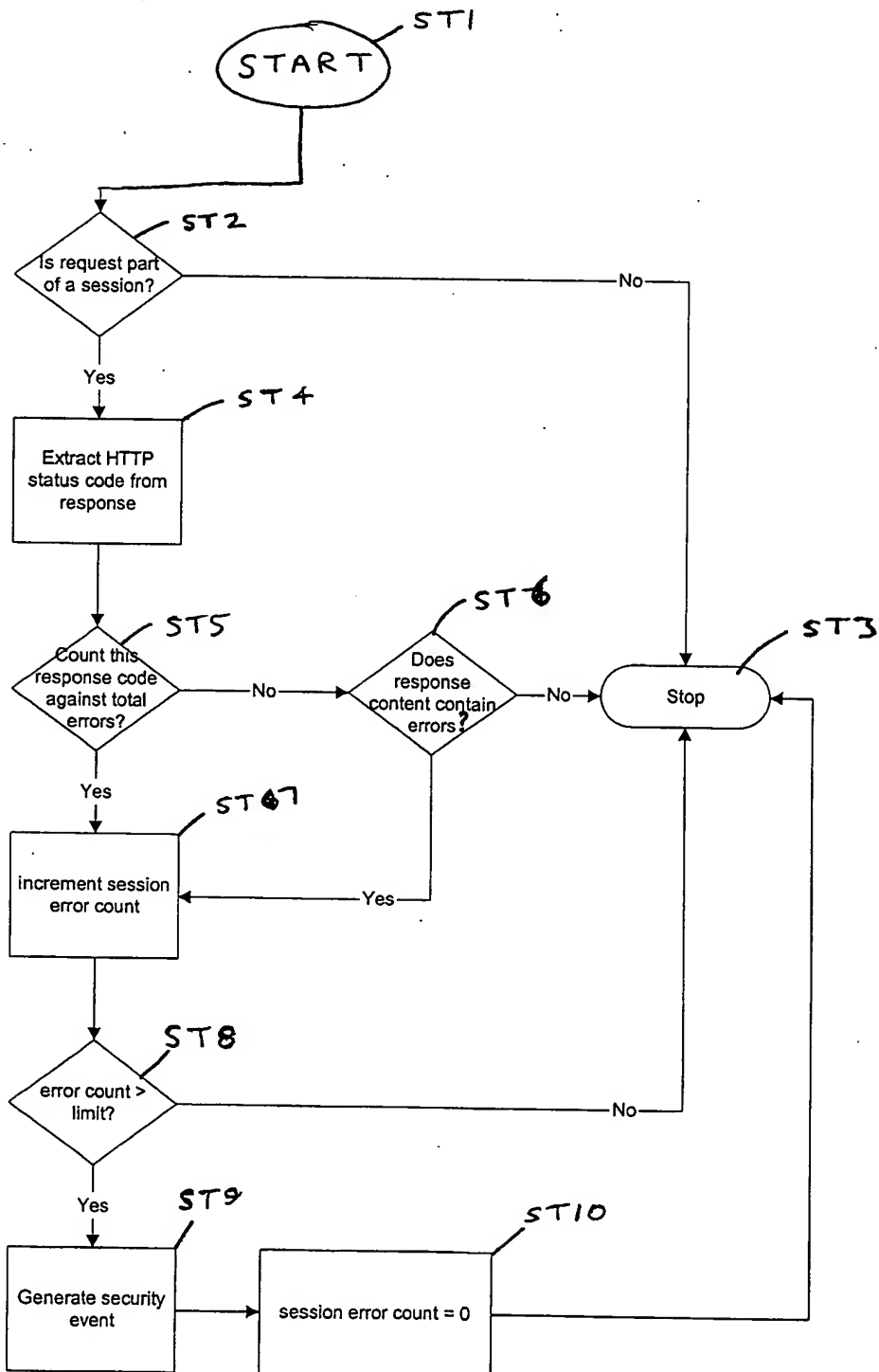


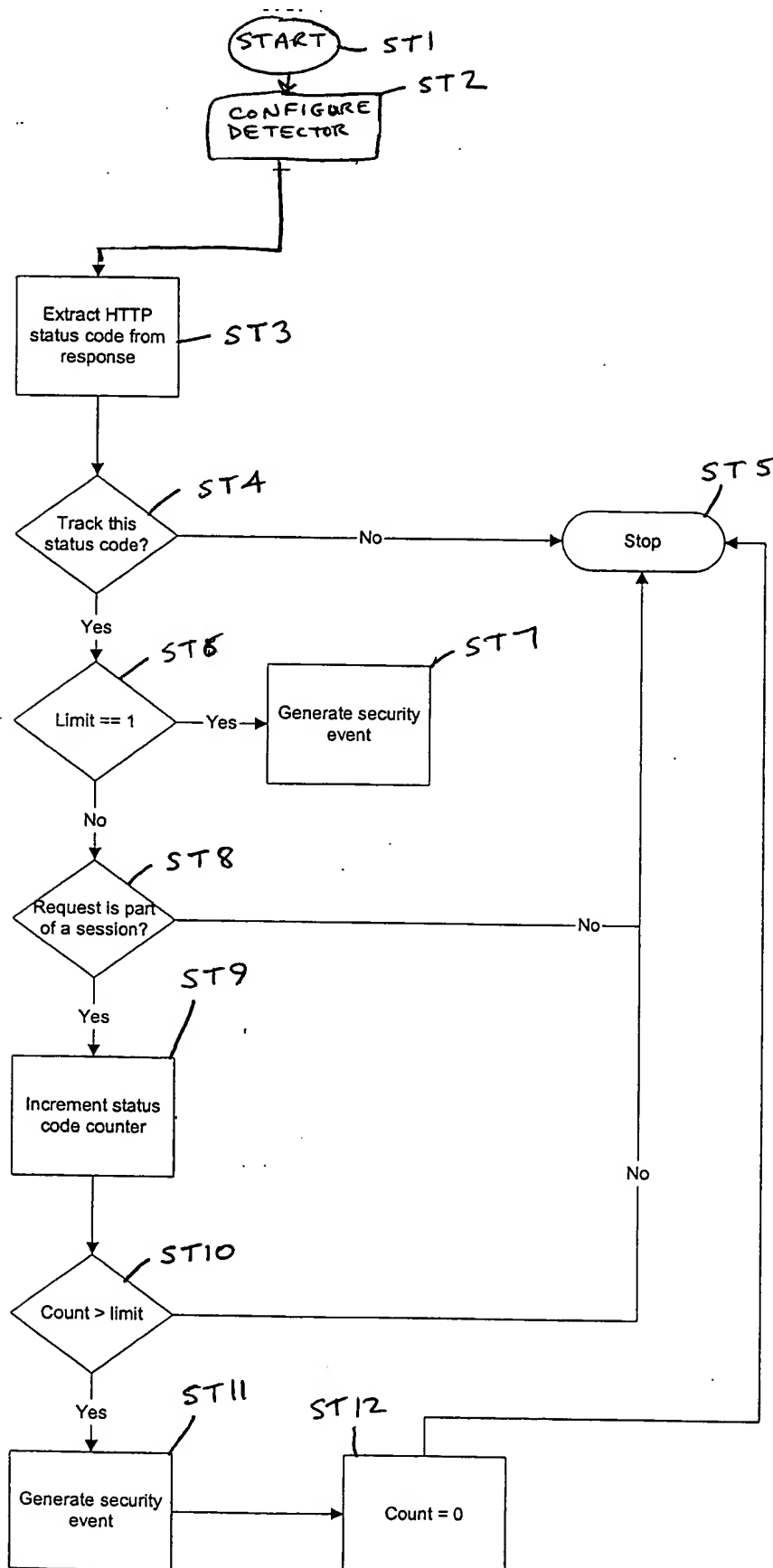
FIG. 27

2700
↓



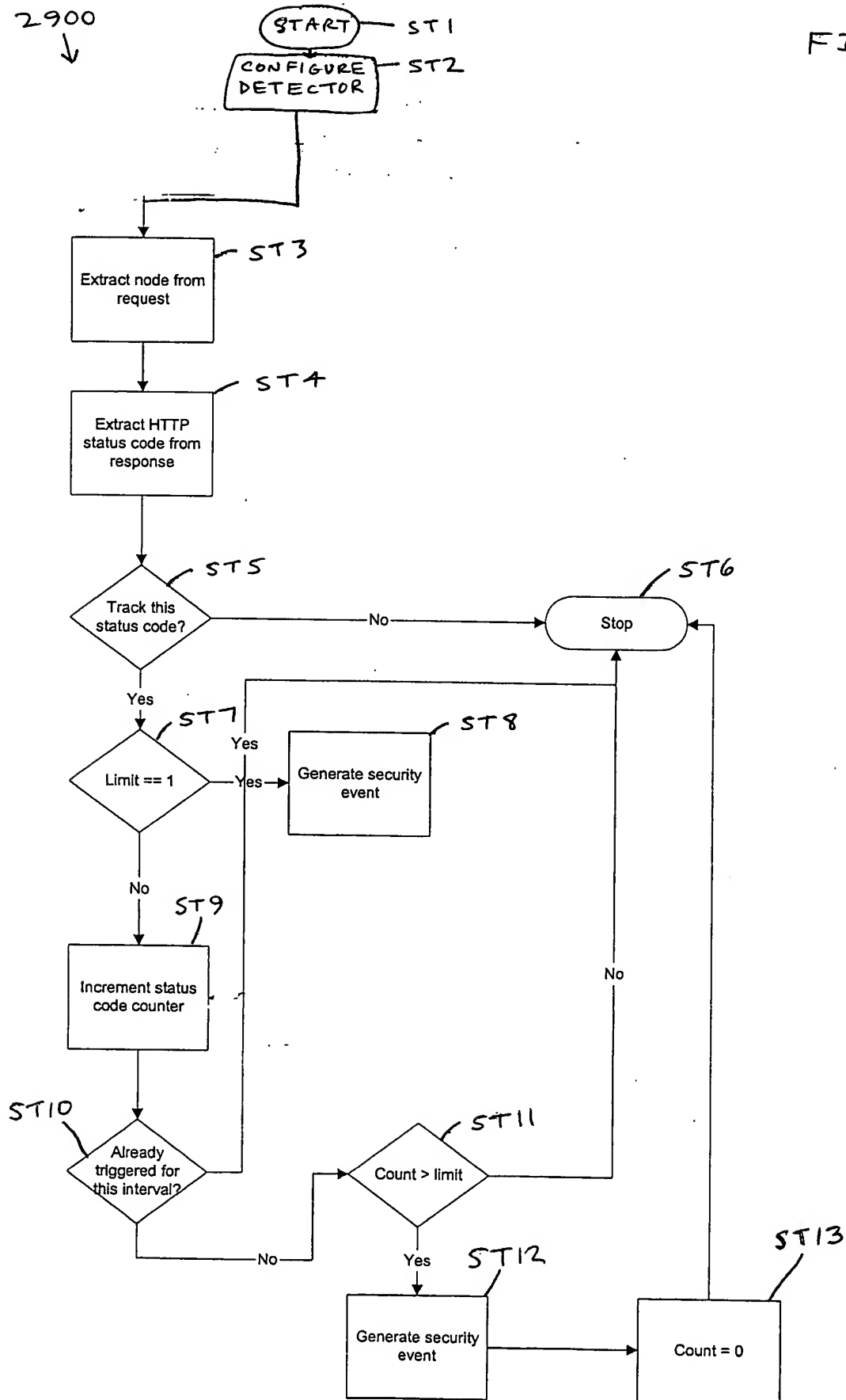
28.00
↓

FIG. 28



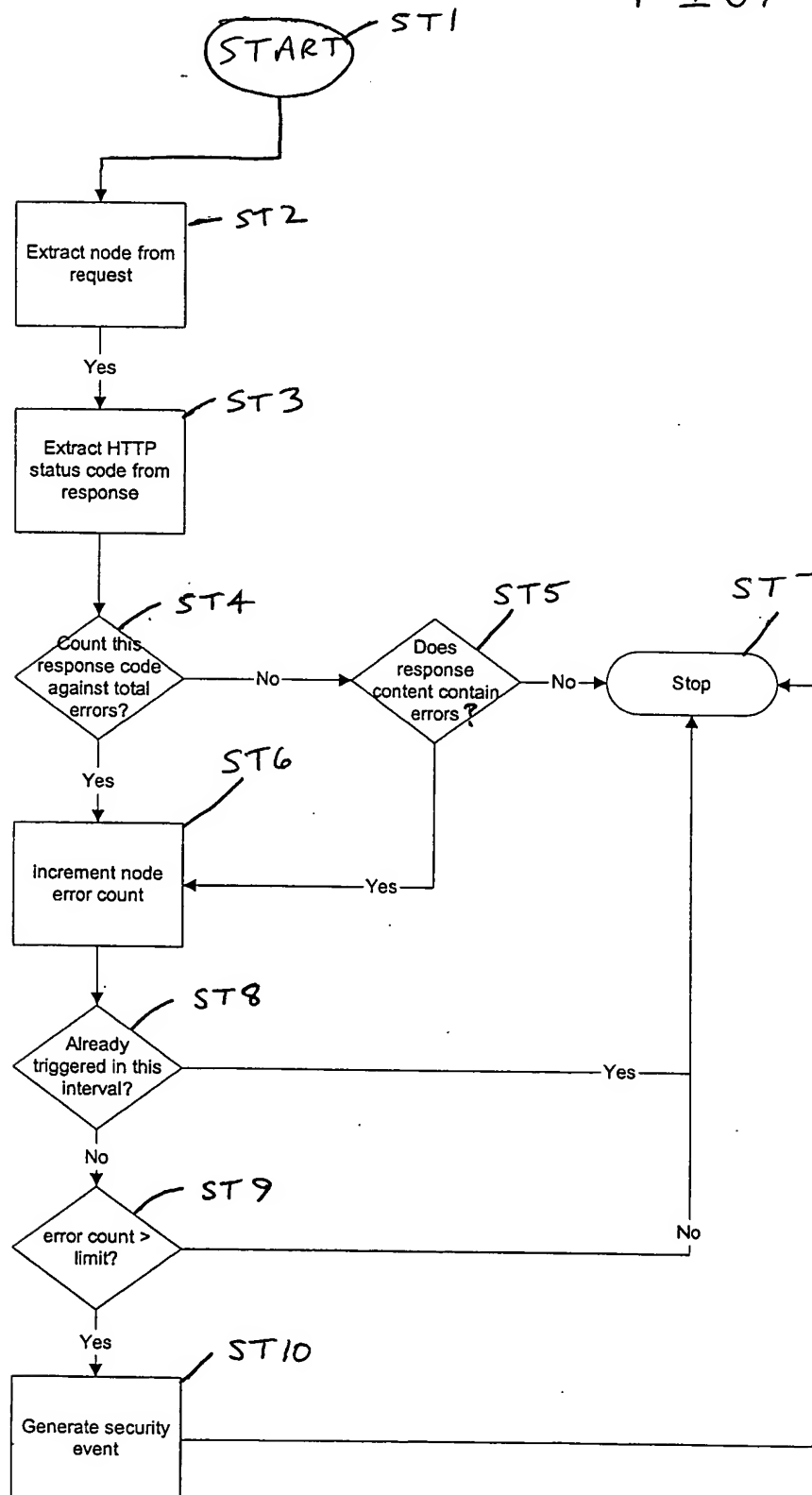
2900
↓

FIG. 29



3000
↓

FIG. 30



3100
↓

FIG. 31

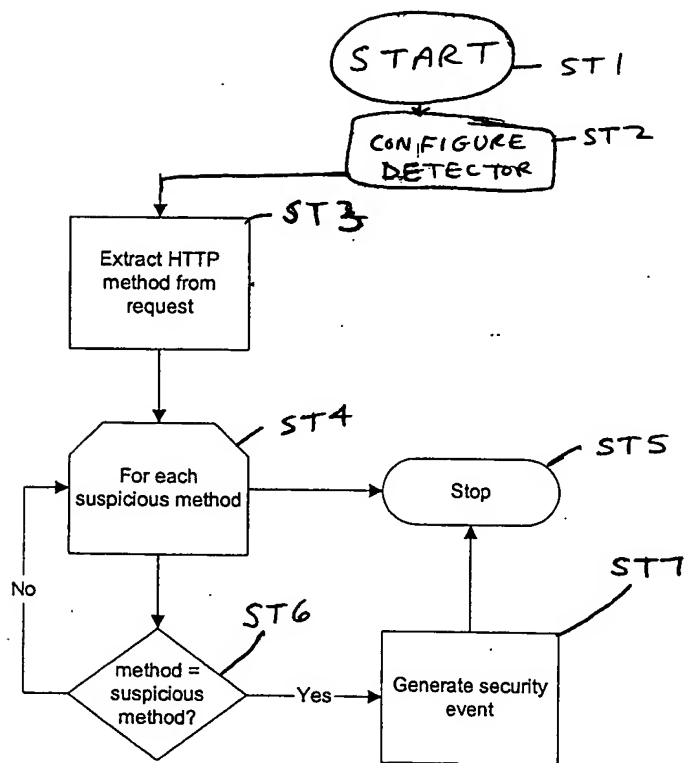
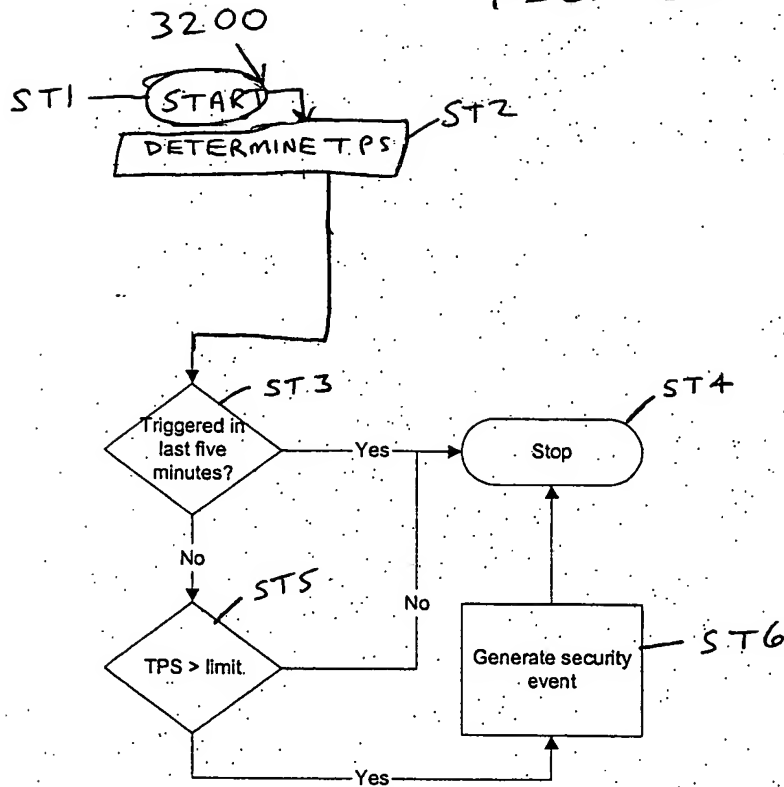


FIG. 32



3300 FIG. 33A.

FIG. 33B

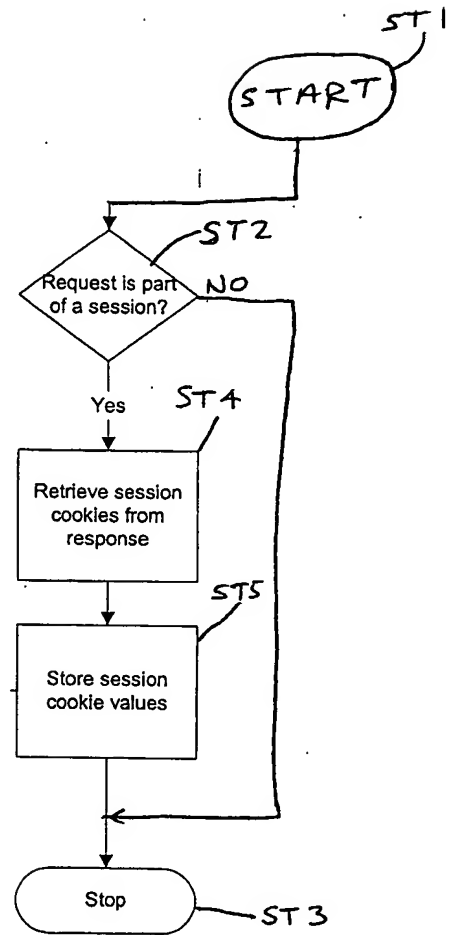
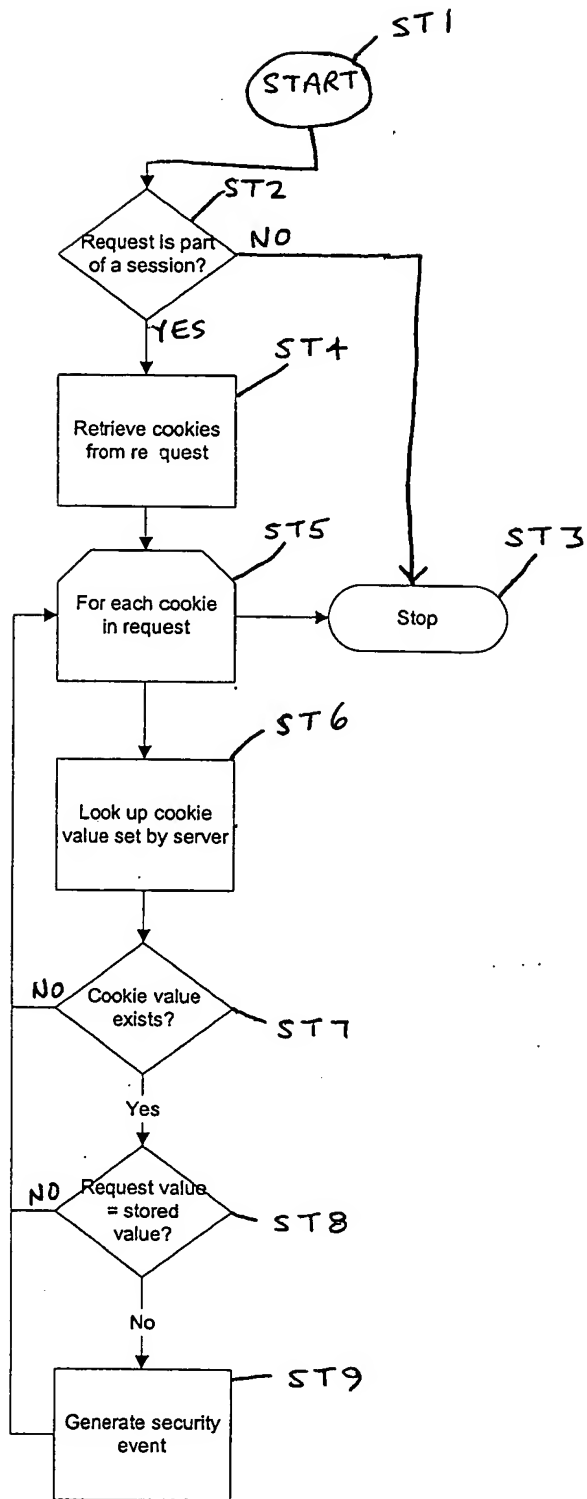


FIG. 34A

3400
↓

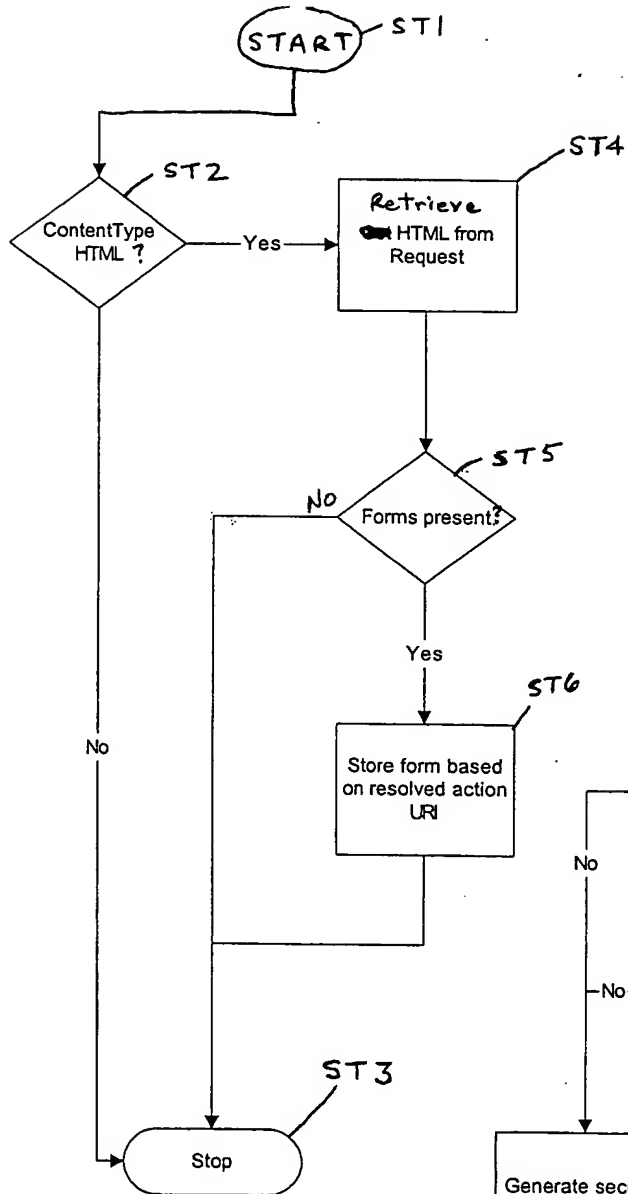


FIG. 34B

3402
↓

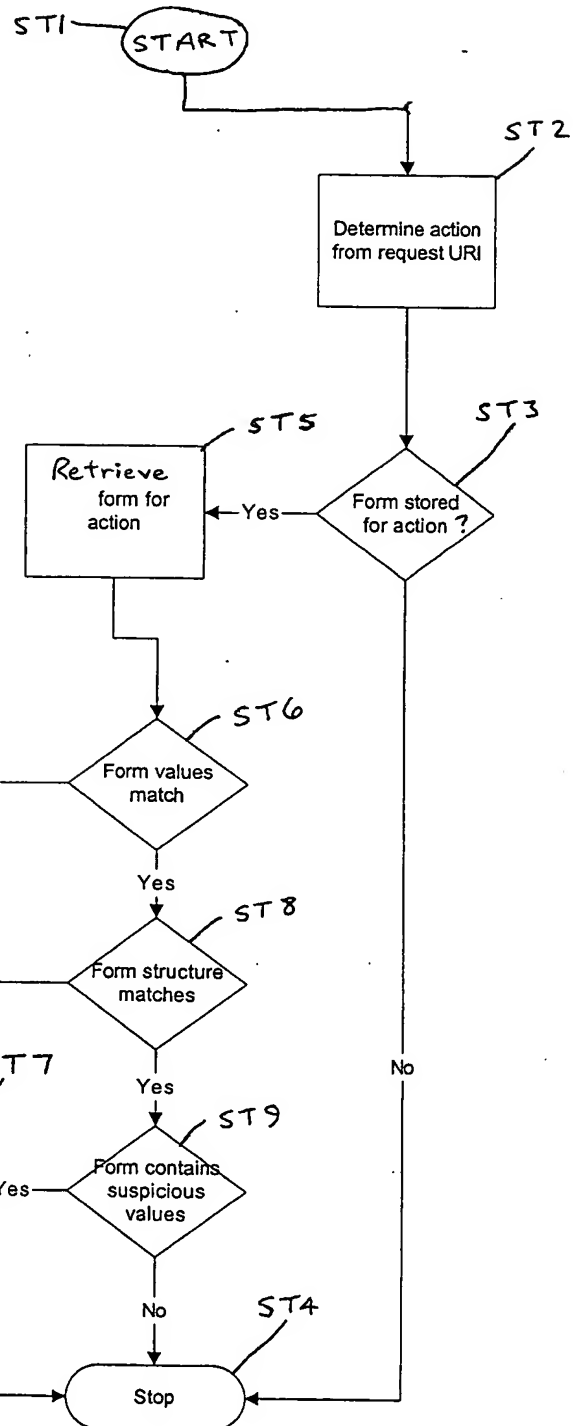


FIG. 35

3500

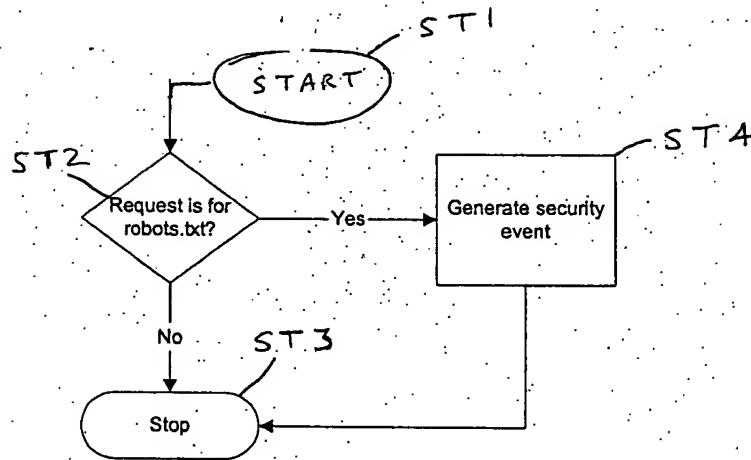


FIG. 36

3600
↓

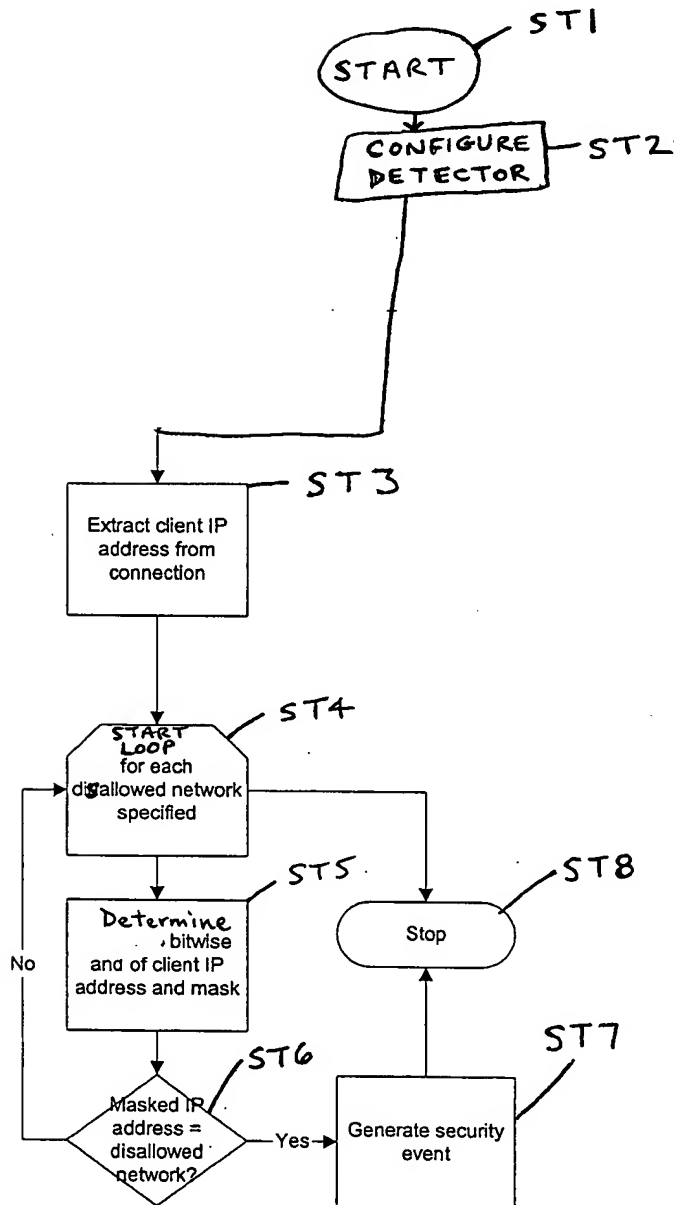


FIG. 37

3700
↓

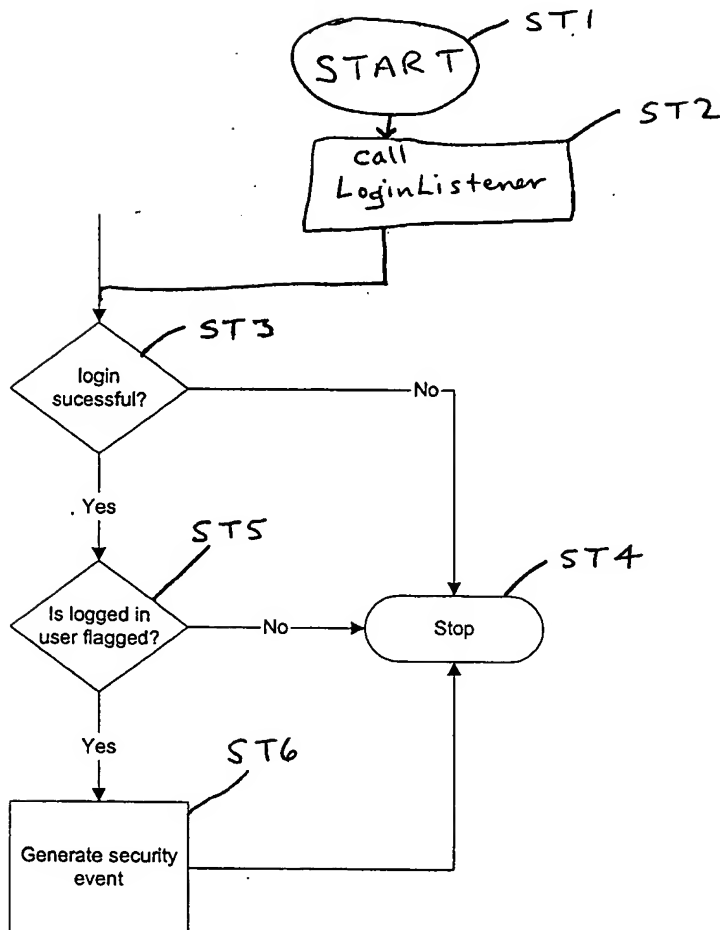


FIG. 38

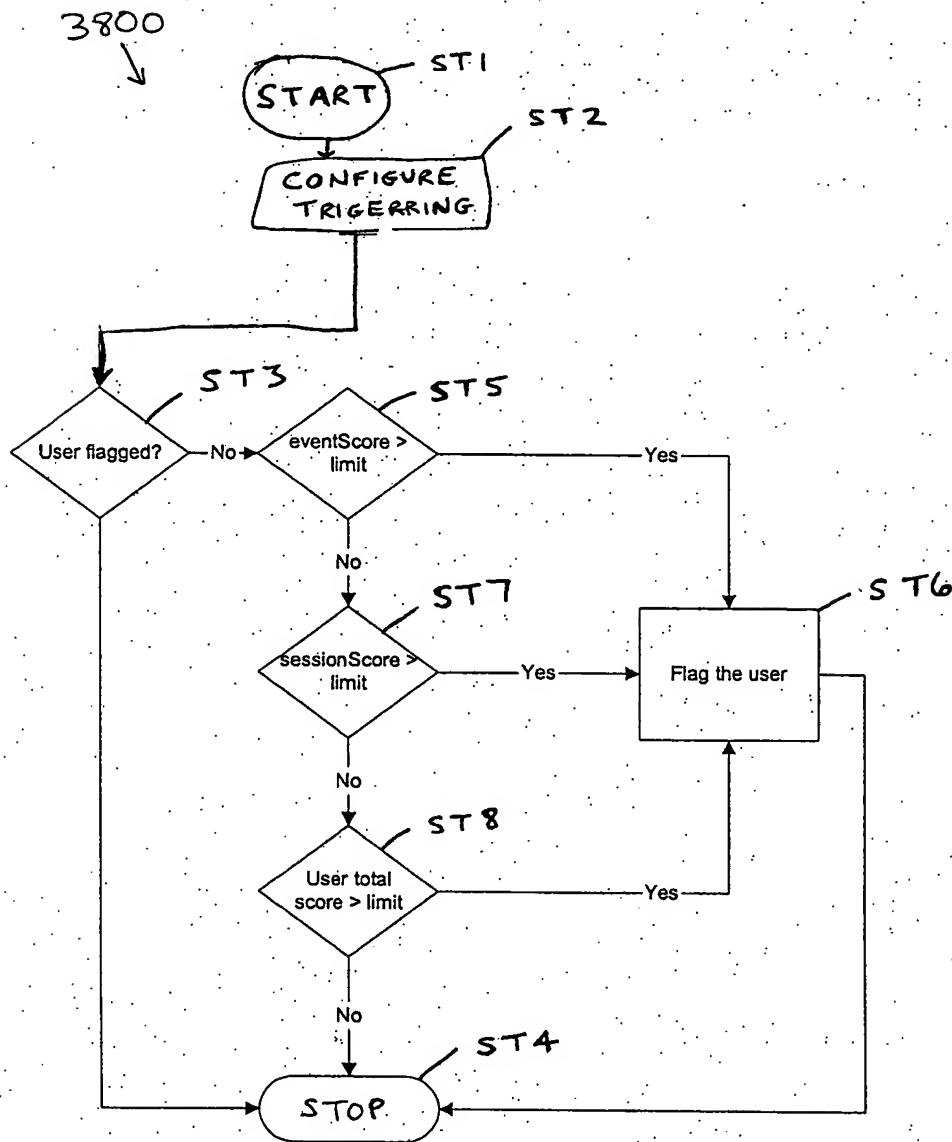


FIG.
39

APs TPS USER

Summary - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media

Address http://192.168.55.211/main.do?page=page_summary

Current Page: Summary Operator: virgilw App Score: 3 TPS: 0.7 Users: 20/31 Time: 10:57 AM

covelight systems
(replication security intelligence)

Monitor Analyze Configure AI CI 3904 SES 3920 Summary Sessions Users Pages Threats

Help About Preferences Logout

3902 3910 3912 3914 3916 5018 3920 3922 3924

Active Sessions				Active Users			
User	Session	Client	Score	User	Client	Score	Flagged
	NNPJL...	24.151.41.183	10	wallace	24.123.144.98	10	N
	BCAKL...	24.118.140.178	10	rhelton	216.187.239.60	10	N
gperez	KAACL...	216.187.239.60	10	lthrash	216.253.195.146	10	N
kated	AEAKL...	216.187.239.60	10	kated	216.187.239.60	10	N
	LNPJL...	205.216.186.2	10	jon	208.61.139.123	10	N
bsmith	LNPLJL...	216.28.152.96	10	gperez	216.187.239.60	10	N
	NHBKL...	205.216.186.2	10	bsmith	216.28.152.96	10	N
lthrash	IEAKL...	216.253.195.146	10	swims123	68.82.75.6	0	N
rhelton	LCACL...	216.187.239.60	10	sshington	216.187.239.60	0	N

Pages				Recent Threats			
URI	Score	Events	Requests	Time	User	Client	Score
/manual/_DOC.asp	10	1	6	1/16/04 10:52 AM	kated	216.187.239.60	0
/control/messageDetail.asp	10	1	10	1/16/04 10:51 AM	btaylor	24.11.194.43	0
/calendar/calendar.asp	10	1	9	1/16/04 10:51 AM	btaylor	24.11.194.43	0
/budget/selectionDetail...	10	1	113	1/16/04 10:48 AM		195.101.94.101	10
/budget/itemAddMod.asp	10	1	134	1/16/04 10:42 AM	lthrash	216.253.195.146	10
/weather/local_radar.asp	0	0	0	1/16/04 10:40 AM	lthrash	216.253.195.146	0
/vbs/_utils.vbs	0	0	91	1/16/04 10:40 AM	lthrash	216.253.195.146	0
/uploads/weather_data/...	0	0	0	1/16/04 10:39 AM	josh	216.187.239.60	0
/uploads/weather_data/...	0	0	0	1/16/04 10:39 AM	kated	216.187.239.60	10

3926 3928 3930 3932 3934 3936 3938 3940

Internet

3906

3908

FIG.
40A

4000

Sessions - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media

Address http://192.168.55.211/main.do?page=sessions Go Links Norton AntiVirus

Current Page: Sessions Operator: virgilw App Score: 3 TPS: 0.7 Users: 20/31 Time: 10:58 AM

Help About Preferences Logout

Monitor Analyze Configure

Summary Sessions Users Pages Threats

Application Sessions

Refresh Reset Filter Export CSV Export XML

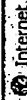
Sessions Status Summary Client Summary Date Summary

Showing 1-15 of 500 (1138 Total Rows)

User	Session ID	Threat score ▼	Start time	Requests	Client	Server
Hank.Cydy	MCBKLCADGOMEPMBJD...	100	1/15/04 8:35 PM	11	205.188.208.168	192.168.2.19
Hank.Cydy	MCBKLCADGOMEPMBJD...	100	1/16/04 2:13 AM	11	205.188.208.168	192.168.2.19
Hank.Cydy	MCBKLCADGOMEPMBJD...	100	1/16/04 7:52 AM	11	205.188.208.168	192.168.2.19
?	LOAKLCADHHEMCOGBO...	90	1/16/04 7:19 AM	50	68.118.56.35	192.168.2.19
?	LOAKLCADHHEMCOGBO...	80	1/16/04 1:40 AM	50	68.118.56.35	192.168.2.19
?	LOAKLCADHHEMCOGBO...	80	1/15/04 8:01 PM	50	68.118.56.35	192.168.2.19
katied	AEAKLCADBJNMCLKI...	70	1/16/04 4:55 AM	691	216.187.239.60	192.168.2.19
katied	AEAKLCADBJNMCLKI...	60	1/15/04 11:17 PM	691	216.187.239.60	192.168.2.19
?	JCBKLCADCCBPNCNFP...	50	1/16/04 2:13 AM	4	205.188.209.78	192.168.2.19
?	JDBKLCADHMGBMKEHC...	50	1/15/04 8:45 PM	7	64.12.95.42	192.168.2.19
?	ECBKLCADBLIHNMFPA...	50	1/16/04 7:48 AM	17	198.81.26.40	192.168.2.19
?	NBBKLCADABKLPBGMG...	50	1/16/04 7:42 AM	2	198.81.26.175	192.168.2.19
?	NBBKLCADABKLPBGMG...	50	1/16/04 2:03 AM	2	198.81.26.175	192.168.2.19
?	LOAKLCADHHEMCOGBO...	50	1/16/04 12:32 AM	1	152.163.252.2	192.168.2.19
?	ECBKLCADBLIHNMFPA...	50	1/16/04 2:09 AM	17	198.81.26.40	192.168.2.19

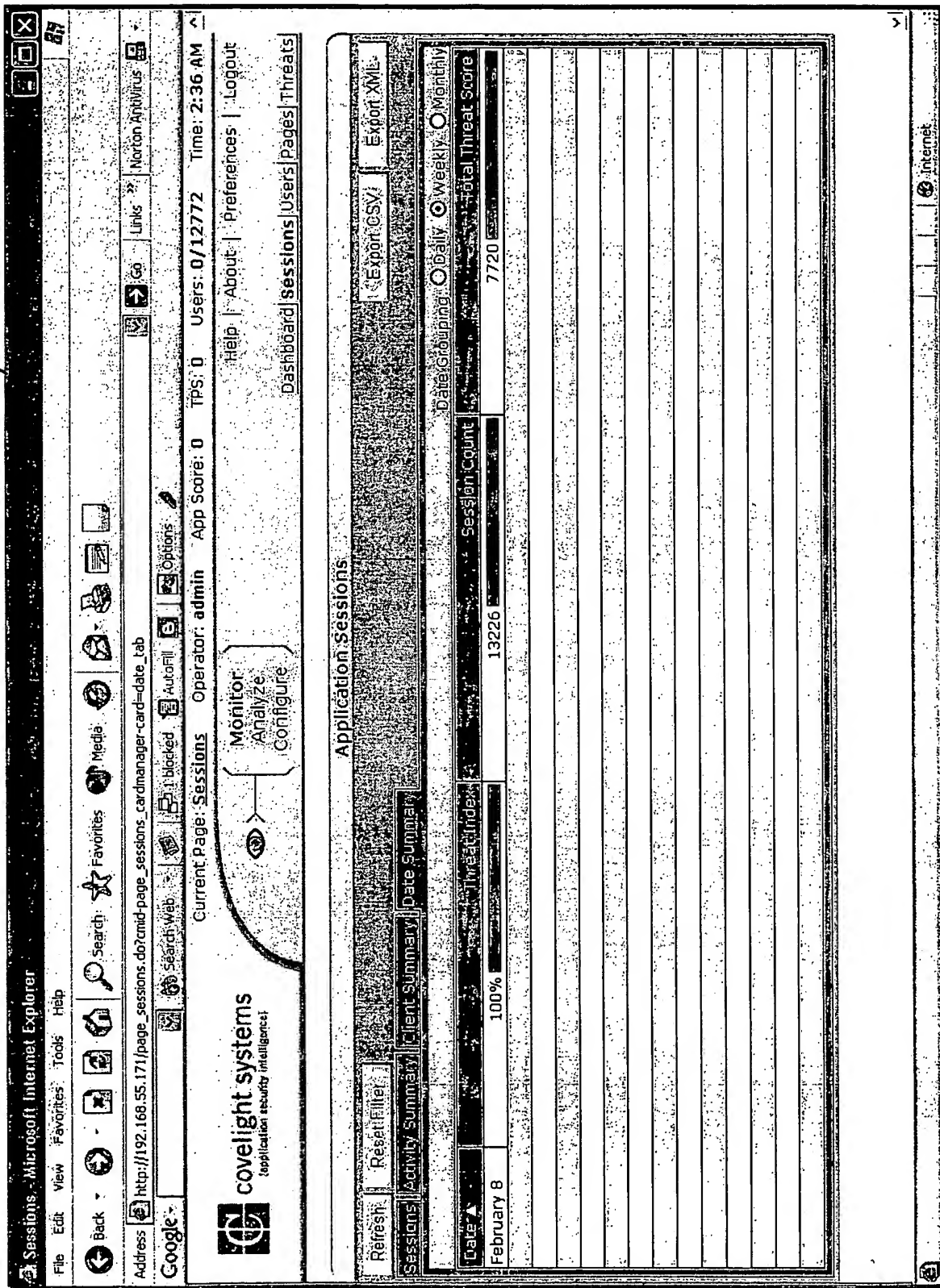
Internet

4002





4036



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PROGRAM PRODUCTS FOR
MONITORING USER BEHAVIOR FOR
A SERVER APPLICATION
Atty Docket: 1503/4/2

FIG.

41

4100


SessionDetail - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Back Search Favorites Media

Address http://192.168.55.211/page_sessions.do?rowlink=1074216912834120&tableindex=0&tableid=page_sessions_table Go Links Norton AntiVirus

Current Page: [Sessions](#) / [Session Detail](#) Operator: virgilw App Score: 3 TPS: 0.4 Users: 20/31 Time: 11:04 AM

 **covelight systems**
(application security intelligence)

 [Monitor](#) [Analyze](#) [Configure](#)

[Help](#) [About](#) [Preferences](#) [Logout](#)

SUM SES USE PAGE THRE
[Summary](#) [Sessions](#) [Users](#) [Pages](#) [Threats](#)

Session Detail

Session: NCBKECADGOMEPMBJDMNCAEON 1/500: Next>	
User: Hank.Cyndy (Search)	Login Method: Login Form
Start Time: 1/15/04 8:35 PM	Last Accessed Time: 1/15/04 8:36 PM
Client IP Address: 205.188.208.168 (Search)	Server IP Address: 192.168.2.19
Session Threat Score: 100	Request Count: 11
Threats: 4	
View Transactions	View Threats

Done Internet

4102

4104

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A SERVER APPLICATION
Atty Docket: 1503/4/2

FIG.

4200

42

Users - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print

Address http://192.168.55.211/main.do?page=page_users Go Links Norton AntiVirus

Current Page: **Users** Operator: virgilw App Score: 3 TPS: 0.5 Users: 20/31 Time: 10:58 AM

covelight systems
(application security intelligence)

Help | About | Preferences | Logout

Summary Sessions Users Pages Threats

Application Users

Refresh Reset Filter Export CSV Export XML

Users | Flagged Summary | Client Summary | Last Login Summary

Showing 1-13 of 31 (31 Total Items)

	User	Current Score	Max Score	Total Score	Total Requests	Avg Requests	Client	Flagged
<input type="checkbox"/>	wallace	10	10	50	82	13	24.123.144.98	N
<input type="checkbox"/>	rhelton	10	20	40	60	20	216.187.239.60	N
<input type="checkbox"/>	lthrash	10	30	100	520	57	216.253.195.146	N
<input type="checkbox"/>	kabed	10	70	80	1382	172	216.187.239.60	N
<input type="checkbox"/>	jon	10	25	50	888	296	208.61.139.123	N
<input type="checkbox"/>	qperaz	10	20	40	212	70	216.187.239.60	N
<input type="checkbox"/>	bsmith	10	20	40	258	86	216.28.152.96	N
<input type="checkbox"/>	swims123	0	10	20	124	41	68.32.75.6	N
<input type="checkbox"/>	sshington	0	10	20	36	12	216.187.239.60	N
<input type="checkbox"/>	sdarden	0	10	20	78	26	198.143.244.44	N
<input type="checkbox"/>	scavander	0	10	30	15	5	216.187.239.60	N
<input type="checkbox"/>	rwarburton	0	40	160	506	46	216.187.239.60	N
<input type="checkbox"/>	mtaylor	0	20	50	598	149	66.180.103.154	N

Reset Delete Search

Internet

4204

4206

4208

4210

4212

4214

4216

4218

4202

FIG. 43

4300


Users - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media Print Mail

Address http://192.168.55.211/page_users.do?rowlink=wallace&tableindex=0&tableid=page_users_table Go Links Norton AntiVirus

Current Page: **Users / User Detail** Operator: virgilw App Score: 3 TPS: 0.2 Users: 20/31 Time: 11:05 AM

 **covelight systems**
(application security intelligence)

 **Monitor**
Analyze
Configure

Help | About | Preferences | Logout

Summary Sessions Users Pages Threats

User Detail

User: **wallace** 1/31 Next>

Current Threat Score:	10	Last Login Time:	1/16/04 9:33 AM
Average Session Score:	8	Longest Session Duration:	1m 36s
Highest Session Score:	10	Average Session Duration:	52 s
Total Threat Score:	50	Total Session Time:	5m 13s
Total Threat Count:	11	Last Client IP Address:	24.123.144.98 (Search)
Total HTTP Requests:	82	Last Server IP Address:	192.168.2.19
Average HTTP Requests Per Session:	13	Active Sessions:	2
Last Reset:	Never	Total Sessions:	6

[View Transactions](#) [View Threats](#)

Flagged: ☐ Notes:

Done Internet

4302

4304

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MONITORING USER BEHAVIOR FOR
A SERVER APPLICATION
Atty Docket: 1503/4/2

FIG.
44

4400

Pages - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media

Address http://192.168.55.211/main.do?page=page_nodes Go Links Norton AntiVirus

Current Page: **Pages** Operator: **virgilw** App Score: **3** TPS: **0.5** Users: **20/31** Time: **10:58 AM**

covelight systems (application security intelligence)

Help | About | Preferences | Logout

Summary | Sessions | Users | Pages | Threats

Monitor Analyze Configure

Application Pages

Refresh Reset Filter Export CSV Export XML

Pages | Flagged Summary | Content-Type Summary | Last Accessed Summary

Showing 1-10 of 232 (232 Total Pages)

Page	Current Score	Average Score	Threat Count	Request Count	Avg Requests	Ratio
<input type="checkbox"/> /manual/_DOC.asp	10	1	1	6	184	N
<input type="checkbox"/> /comim/messageDetail.asp	10	2	1	10	1140	N
<input type="checkbox"/> /calendar/calendar.asp	10	26	1	9	158	N
<input type="checkbox"/> /budget/selectionDetail.asp	10	3	1	113	3839	N
<input type="checkbox"/> /budget/itemAddMod.asp	10	1	1	134	1696	N
<input type="checkbox"/> /weather/local_radar.asp	0	0	0	0	0	N
<input type="checkbox"/> /vbs/_utils.vbs	0	0	0	91	1	N
<input type="checkbox"/> /uploads/weather_data/icons/88.gif	0	0	0	0	0	N
<input type="checkbox"/> /uploads/weather_data/icons/87.gif	0	0	0	0	0	N
<input type="checkbox"/> /uploads/weather_data/icons/85.gif	0	0	0	5	0	N

Delete Selected Reset All Search

Current Interval Ends At 1/16/04 11:00 AM

Last Reset Never

4428

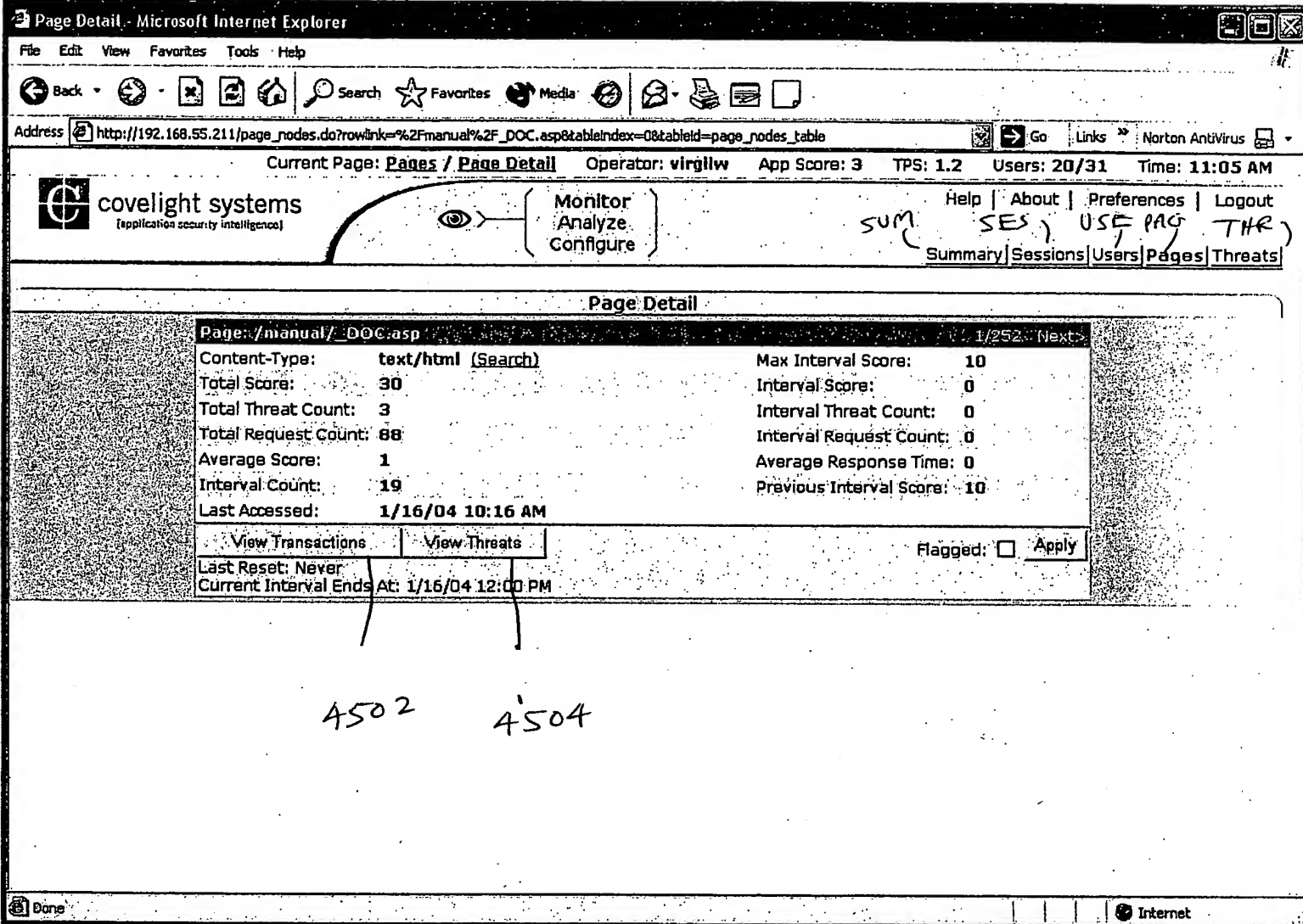
4430

4412 4414

FIG.

45

4500



4502

4504

FIG.
46A

4600

Threats - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail News RSS

Address http://192.168.55.211/main.do?page=page_events Go Links Norton AntiVirus

Current Page: Threats Operator: virgilw App Score: 3 TPS: 0.5 Users: 20/31 Time: 10:58 AM

covelight systems
(application security intelligence)

Help | About | Preferences | Logout

Summary Sessions Users Pages Threats

Refresh Reset Filter Export CSV Export XML

Threats | Detector Summary | Page Summary | Client Summary | Server Summary | Date Summary

Showing 12 of 104 Total Items

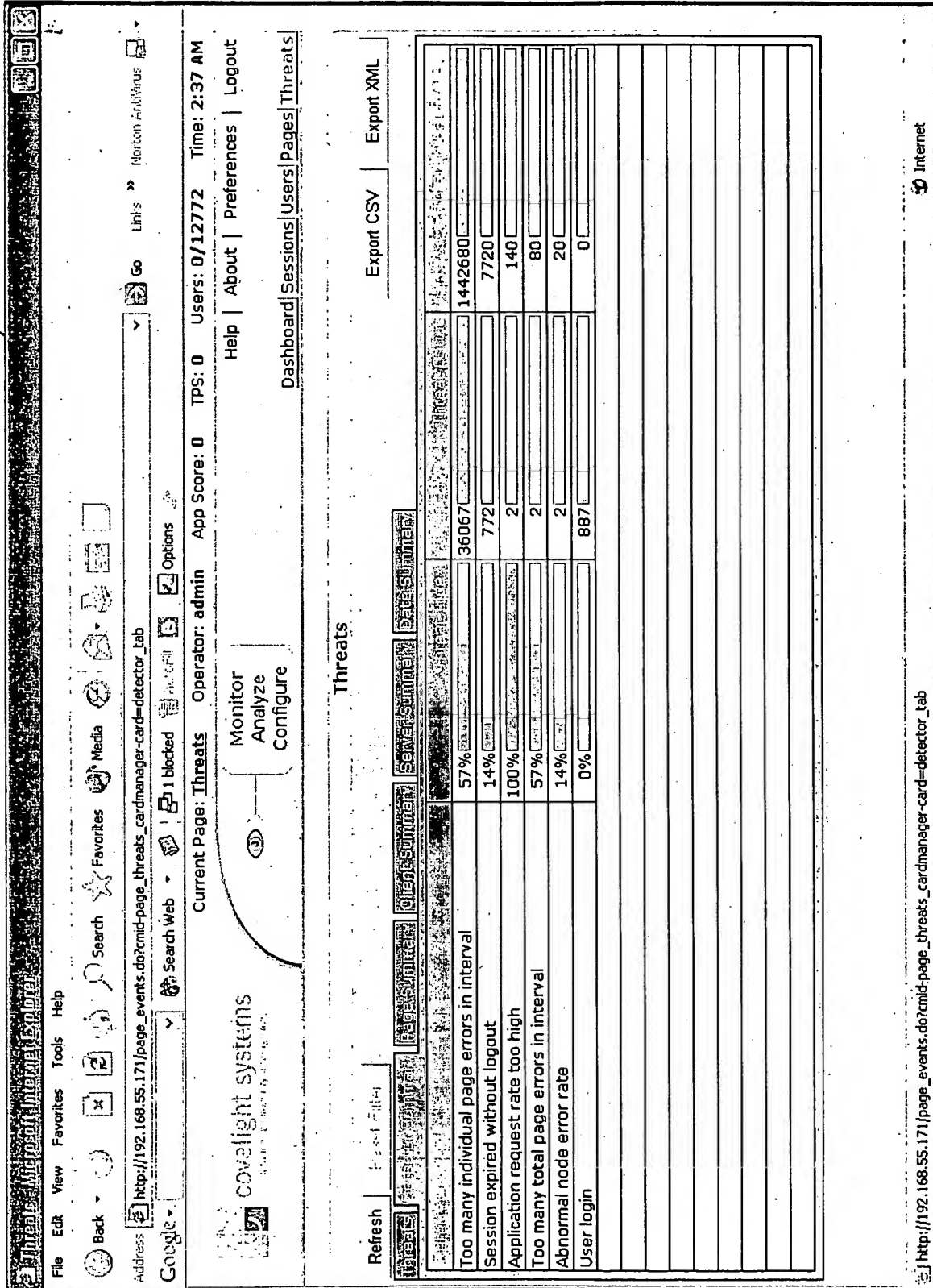
Timestamp	Score	Detector	Request URI	User	Flagged	Client
1/15/04 11:53 PM	20	Simultaneous login	/project/project.asp	rwarburton	N	216.187.239.60
1/15/04 11:45 PM	10	Login time does not match acceptable window	/auth/login.asp	rwarburton	N	65.140.140.189
1/15/04 11:45 PM	0	User login	/auth/login.asp	rwarburton	N	65.140.140.189
1/15/04 11:35 PM	10	Login time does not match acceptable window	/auth/login.asp	katied	N	216.187.239.60
1/15/04 11:35 PM	0	User login	/auth/login.asp	katied	N	216.187.239.60
1/15/04 11:33 PM	10	Login time does not match acceptable window	/auth/login.asp	btaylor	N	24.11.194.43
1/15/04 11:33 PM	0	User login	/auth/login.asp	btaylor	N	24.11.194.43
1/15/04 11:33 PM	10	Login time does not match acceptable window	/auth/login.asp	btaylor	N	24.11.194.43
1/15/04 11:33 PM	0	User login	/auth/login.asp	btaylor	N	24.11.194.43
1/15/04 11:31 PM	10	Web crawler	/robots.txt	?	N	195.101.94.101
1/15/04 11:23 PM	10	Login time does not match acceptable window	/auth/login.asp	lthrash	N	216.253.195.146
1/15/04 11:23 PM	0	User login	/auth/login.asp	lthrash	N	216.253.195.146
1/15/04 11:23 PM	10	Login time does not match acceptable window	/auth/login.asp	lthrash	N	216.253.195.146
1/15/04 11:23 PM	0	User login	/auth/login.asp	lthrash	N	216.253.195.146
1/15/04 11:22 PM	10	Login time does not match acceptable window	/auth/login.asp	josh	N	216.187.239.60

Internet

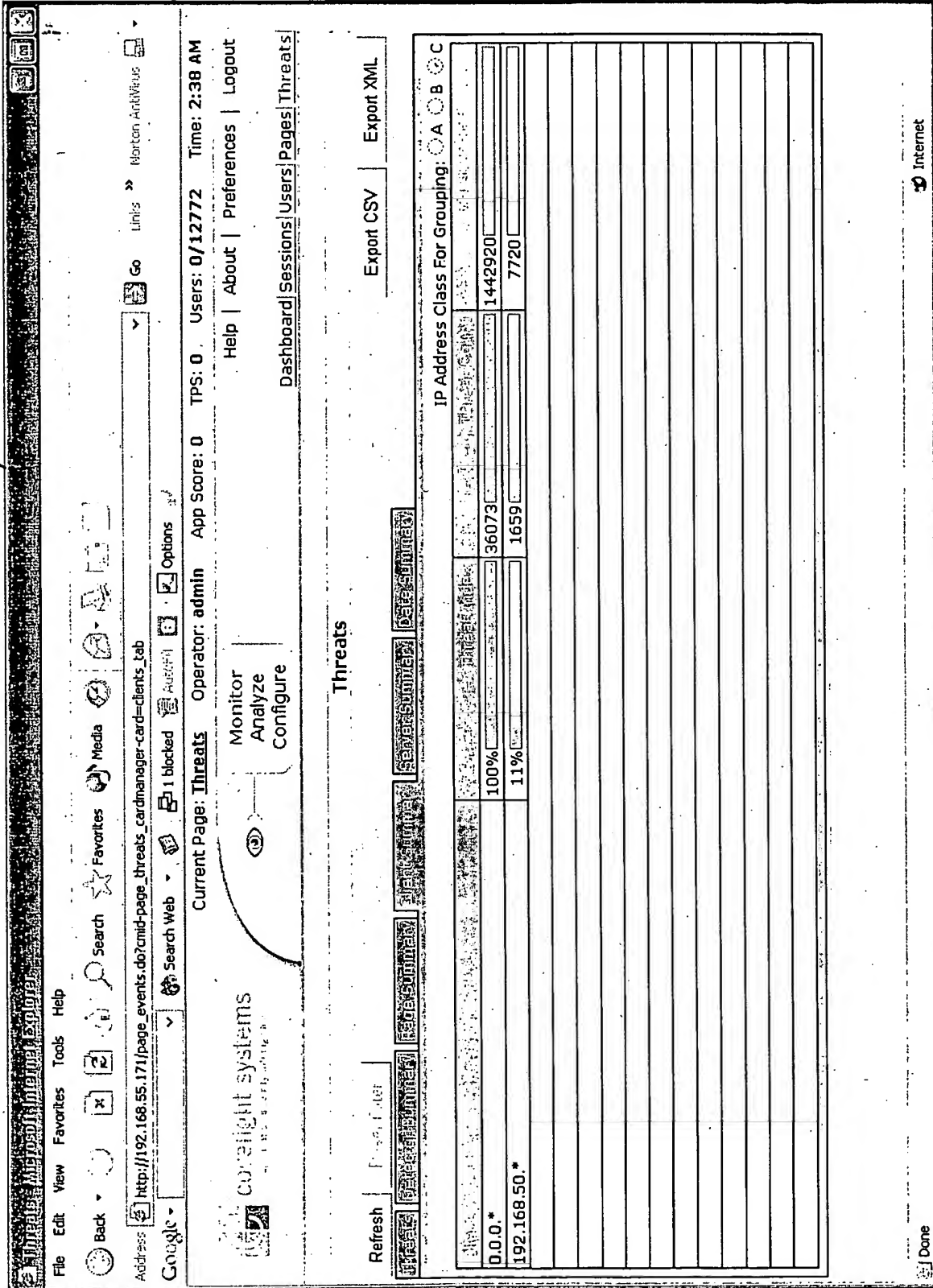
4602

4612 4614

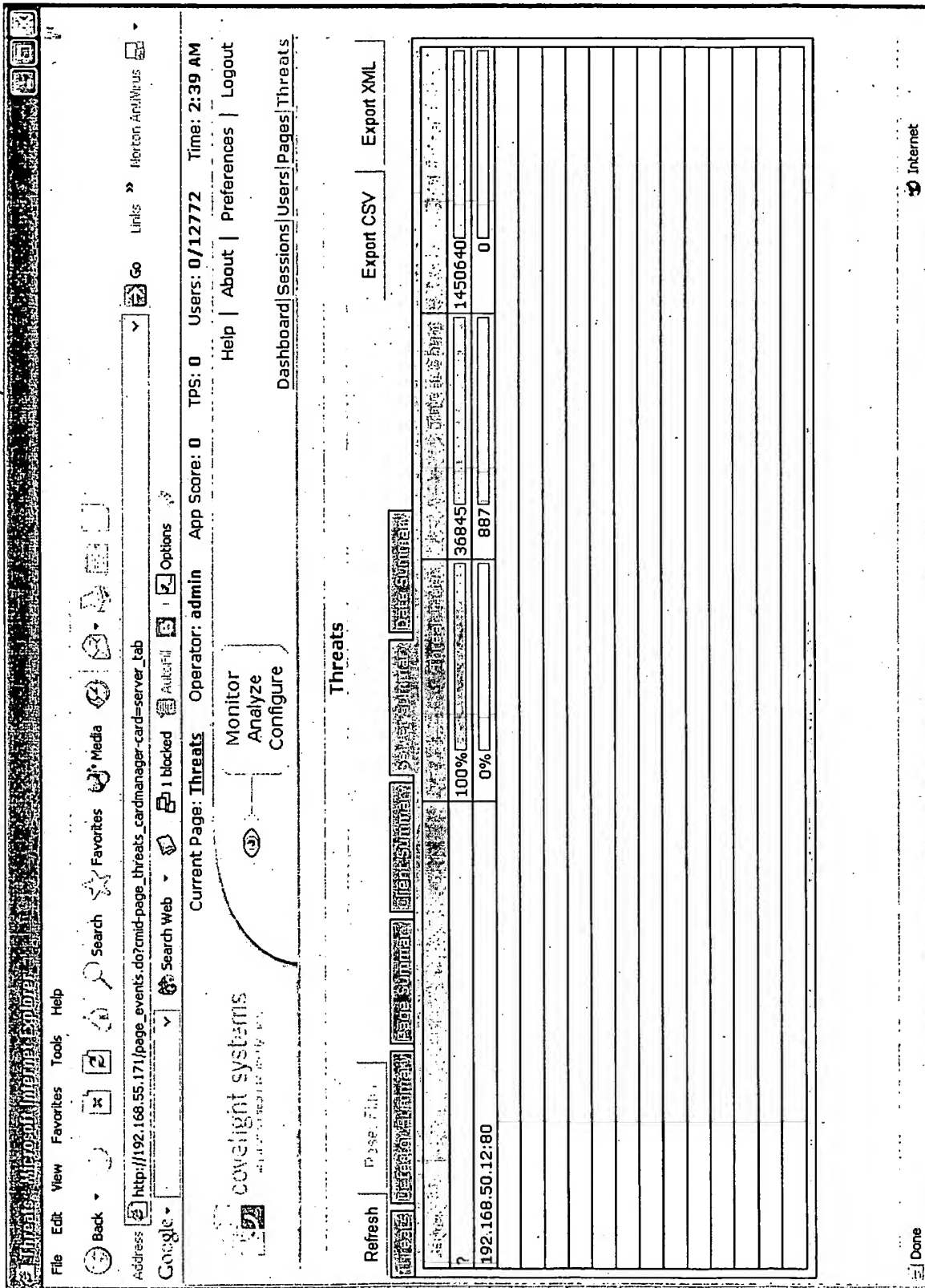
4616







4638



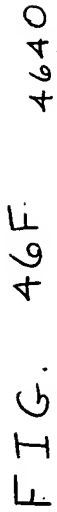


FIG.

4700 47


Threat Detail - Microsoft Internet Explorer


File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media Print Mail

Address http://192.168.55.211/page_events.do?rowlink=1074228788814103&tableindex=0&tableid=page_threats_table Go Links Norton AntiVirus

Current Page: **Threats / Event Detail** Operator: virgilw App Score: 3 TPS: 0.4 Users: 20/31 Time: 11:06 AM

 **covelight systems**
(application security intelligence)

 **Monitor**
Analyze
Configure

Help | About | Preferences | Logout

SUM SES USE PAG THR
Summary Sessions Users Pages Threats

Threat Detail

1/104 Next>

Timestamp:	1/15/04 11:53 PM
Threat score:	20
Detector:	Simultaneous login (Search)
Description:	User is logged in twice on different sessions
Request URI:	/project/project.asp (Search)
User:	rwburton (Search)
Flagged:	<input type="checkbox"/>
Session ID:	LOAKLCADCGLHMKMICHJKHPLO (Search)
Client IP address:	216.187.239.60 (Search)
Server IP address:	192.168.2.19:80 (Search)

Internet

FIG. 48

4800

Transactions - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://192.168.55.211/main.do?page=page_bns

Current Page: Transactions Operator: virgilw App Score: 3 TPS: 0.2 Users: 20/31 Time: 11:00 AM

covelight systems (application security intelligence)

Monitor Analyze Configure MI AI CI 4830 4832 4836 4834 4838 Transactions Network

Refresh Reset Filter Export CSV Export XML

Transactions Method Summary Client Summary Page Summary Status Summary Content-Type Summary Server Summary Date Summary

Showing 1-15 of 1000 (25023 Total Items)

Method	URI	User	Status	Content Length	Content Type	Threat Score	Timestamp	Response Time
GET	/	?	302	135	text/html	0	1/16/04 11:00 AM	6
GET	/images/addloc.gif	?	200	1854	image/gif	0	1/16/04 11:00 AM	2
GET	/images/additem.gif	?	200	1529	image/gif	0	1/16/04 11:00 AM	0
GET	/images/selectsum.gif	?	200	2079	image/gif	0	1/16/04 11:00 AM	0
GET	/images/rt_tabnotch.gif	?	200	49	image/gif	0	1/16/04 11:00 AM	0
GET	/images/lt_tabnotch.gif	?	200	48	image/gif	0	1/16/04 11:00 AM	0
GET	/images/s.gif	?	200	43	image/gif	0	1/16/04 11:00 AM	0
GET	/js/menu.js	?	200	897	application/x-javascript	0	1/16/04 11:00 AM	0
GET	/vbs/_utils.vbs	?	200	956	text/vbscript	0	1/16/04 11:00 AM	0
GET	/js/model.js	?	200	421	application/x-javascript	0	1/16/04 11:00 AM	0
GET	/js/util.js	?	200	5608	application/x-javascript	0	1/16/04 11:00 AM	3
GET	/js/_const.js	?	200	200	application/x-javascript	0	1/16/04 11:00 AM	0
GET	/include/builder_styles/stylemain.css	?	200	12924	text/css	0	1/16/04 11:00 AM	0
GET	/budget/itemaddmod.asp	jon	200	5488	text/html	0	1/16/04 11:00 AM	199
GET	/budget/selectionDetail.asp	jon	200	10454	text/html	0	1/16/04 11:00 AM	2026

Internet

4804

4802

4806

4808

4810

4812

4814

4816

4818

4820

FIG. 49

4900


Transaction Detail - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media Print Mail

Address http://192.168.55.211/page_bns.do?rowlink=107426881090038488&tableindex=18&tableid=page_bns_table Go Links Norton AntiVirus

Current Page: [Transactions](#) / [Transaction Detail](#) Operator: virgilw App Score: 3 TPS: 0.1 Users: 20/31 Time: 11:07 AM

 **covelight systems**
[application security intelligence]

Help | About | Preferences | Logout

[Transactions](#) | [Network](#)

Transaction Detail

Transaction: 107426881090038488 Previous: 10740000 Next: 107426881090038489

Timestamp:	1/16/04 11:00 AM	HTTP response:	302 (Search)
Method:	POST (Search)	Content Length:	175
URI:	/budget/itemAddM od.asp (Search)	Content Type:	text/html (Search)
User:	1 (Search)	Server Response Time:	2.8 s
Client IP Address:	66.180.103.154 (Search)	Server IP Address:	192.168.2.19:80 (Search)
Session ID:	7 (Search)		

Parameters

Name	Value
lngAttachmentsCount	0
chkInventory	0
lngEventId	
txtItemDesc	co.#3
binNewItem	False
DeleteOneAttachment	
actionType	Save
strWebLink	
lngLocationId	650189281
lngOldProjectId	560003098
oldItemId	
itemId	501077459
txtItemInfo	
lngSelectionId	600062400

Done Internet

FIG.

50

5000

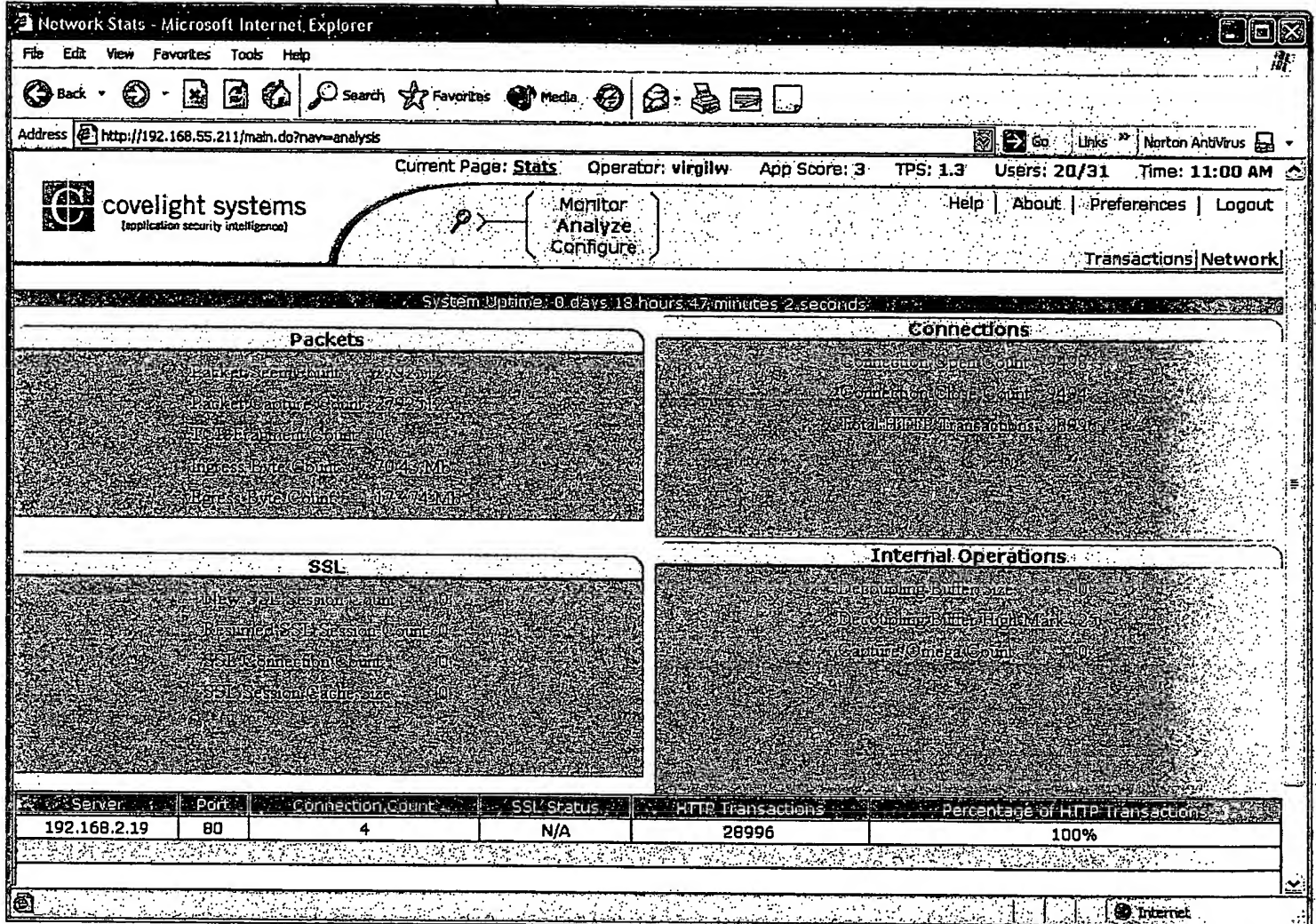


FIG. 51

5100


Preferences - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address http://192.168.55.211/main.do?page=page_appconfig Go Links Norton AntiVirus

Current Page: **Preferences** Operator: virgilw App Score: 3 TPS: 0.1 Users: 20/31 Time: 11:07 AM

 **covelight systems**
(application security intelligence)

Help | About | Preferences | Logout

Application | Appliance | Detection | Operators | Save Points

Change Password

Current Password:

New Password:

Confirm Password:

Apply

Interface Settings

Table Size:

Refresh Rate: ☐ Second

Apply

Internet

5102

5104

FIG. 52

5200


Appliance - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media Print Mail Print Mail

Address http://192.168.55.211/page_sensorcfg.do?cmid-page_cfg%appliance_cardmanager1-card=network_tab Go Links Norton AntiVirus

Current Page: **Appliance** Operator: virgilw App Score: 4 TPS: 0.3 Users: 20/31 Time: 11:10 AM

 **covelight systems**
(application security intelligence)

[Monitor](#) [Analyze](#) [Configure](#) [Help](#) [About](#) [Preferences](#) [Logout](#)

[Application](#) [Appliance](#) [Detection](#) [Operators](#) [Save Points](#)

Control **Network** Time Firmware SMTP Server

IP Address	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Netmask	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Gateway	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Primary DNS	<input type="text" value="192"/>	<input type="text" value="168"/>	<input type="text" value="55"/>	<input type="text" value="240"/>
Secondary DNS	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>
Enable <input checked="" type="checkbox"/> DHCP Port	<input type="text" value="80"/>			
Enable <input checked="" type="checkbox"/> HTTPS Port	<input type="text" value="443"/>			
<input type="button" value="Apply and Reboot Sensor"/>				

Internet

5202

FIG. 53

5300


Appliance - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address http://192.168.55.211/page_sensorcfg.do?cmid=page_cfg&appliance_cardmanager1-card=smtpserversettings_tab Go Links Norton AntiVirus

Current Page: **Appliance** Operator: virgilw App Score: 4 TPS: 1.7 Users: 23/31 Time: 11:28 AM

 **covelight systems**
(application security intelligence)

Help | About | Preferences | Logout

Monitor
Analyze
Configure

Application | **Appliance** | Detection | Operators | Save Points

Control | Network | Time | Firmware | **SMTP Server**

SMTP Server:

Username:

Password:

From Name:

Return Address:

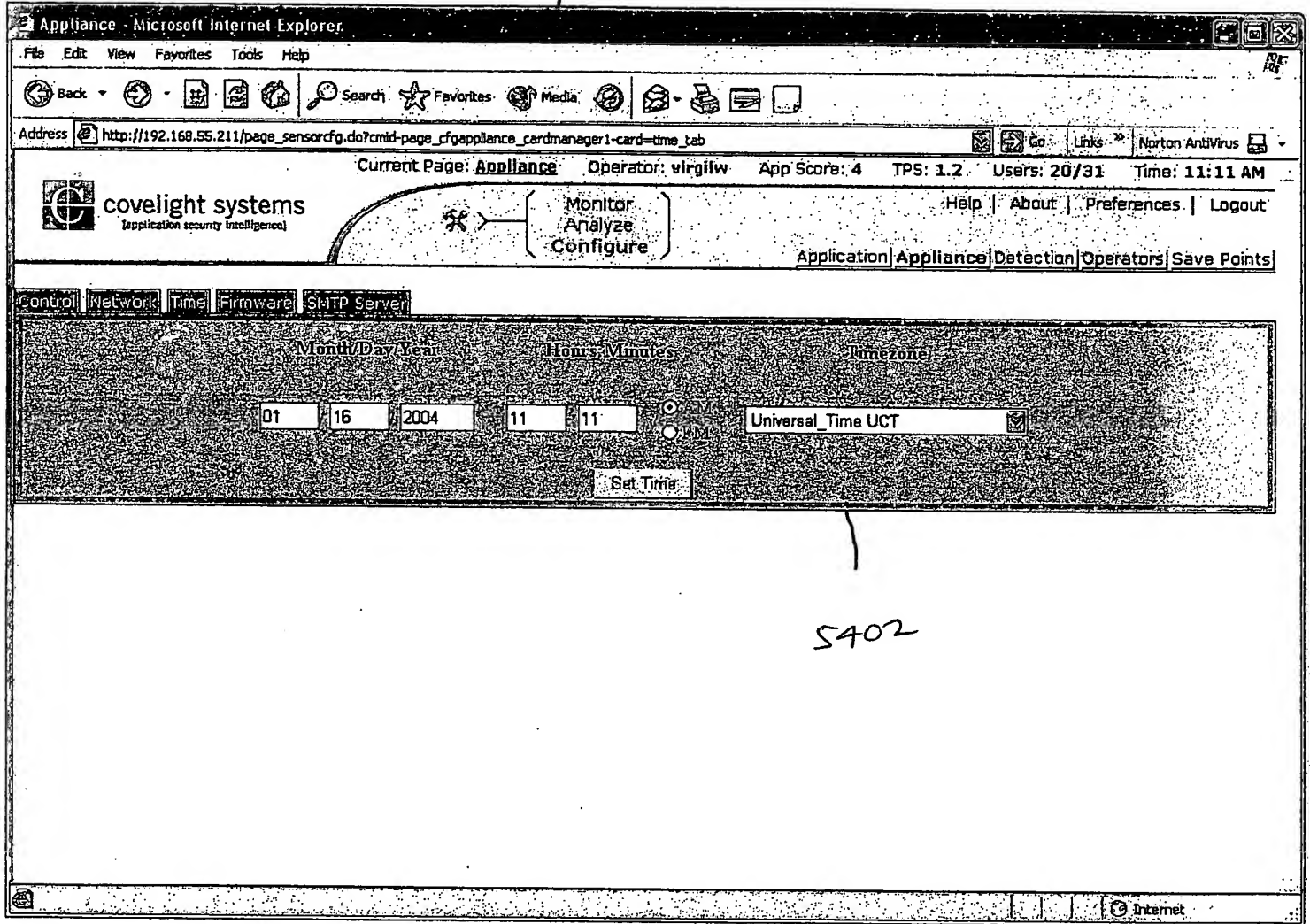
Enable Pop before Send: ☐

Apply

Internet

FIG. 54

5400



5402

FIG. 55
5500

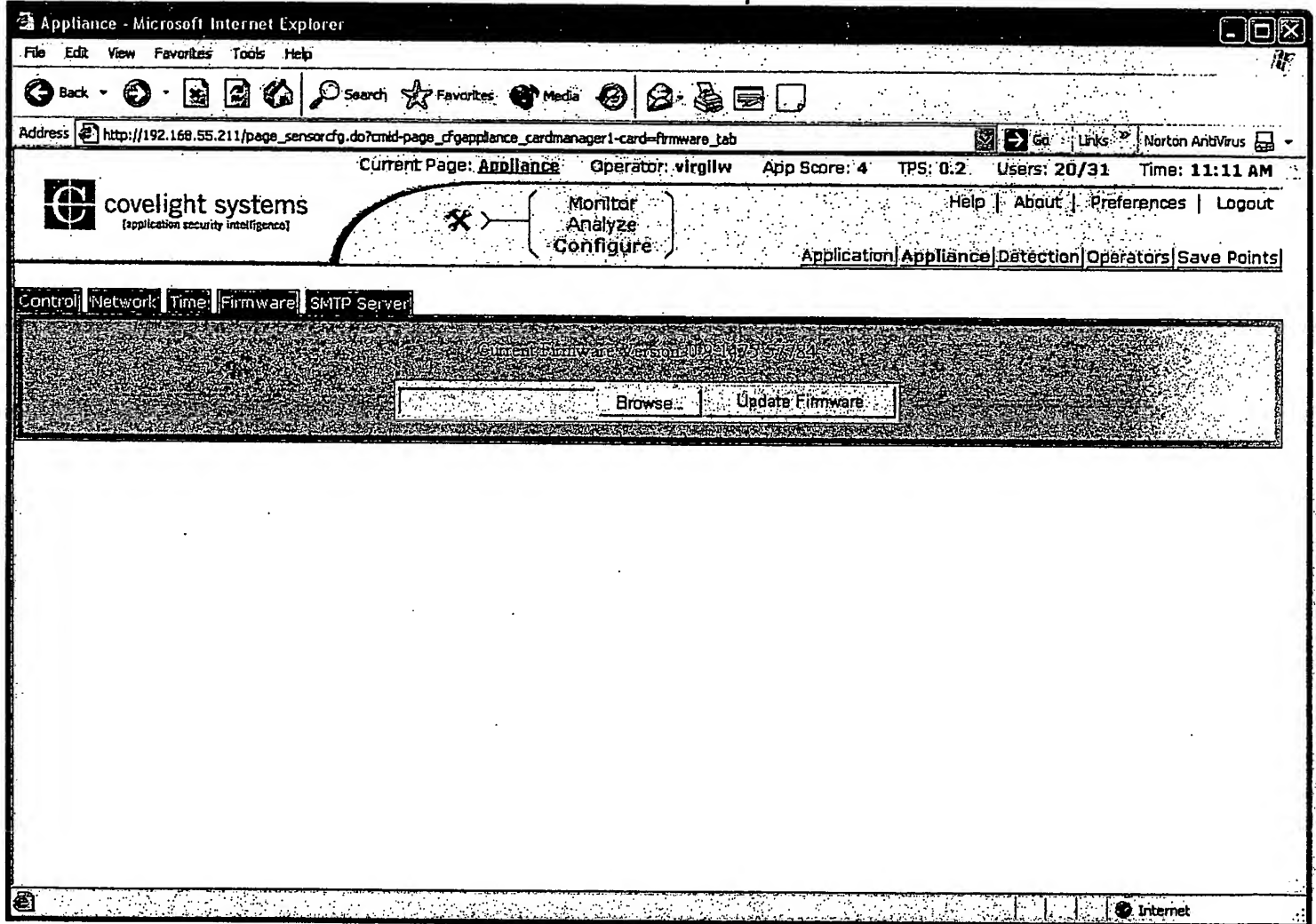


FIG. 56

5600

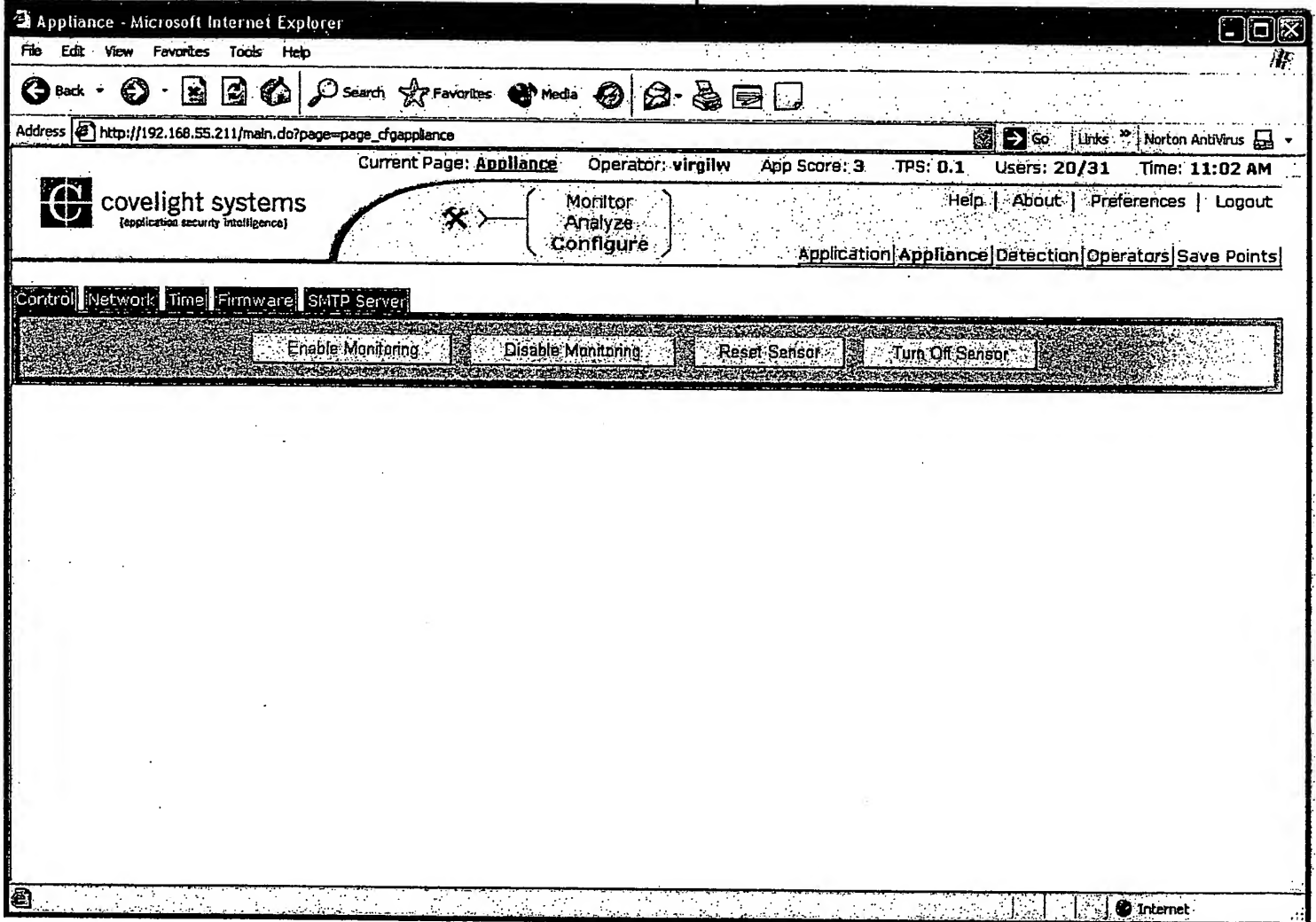


FIG. 57

5700

5702

5704

5706

FIG. 58

5800

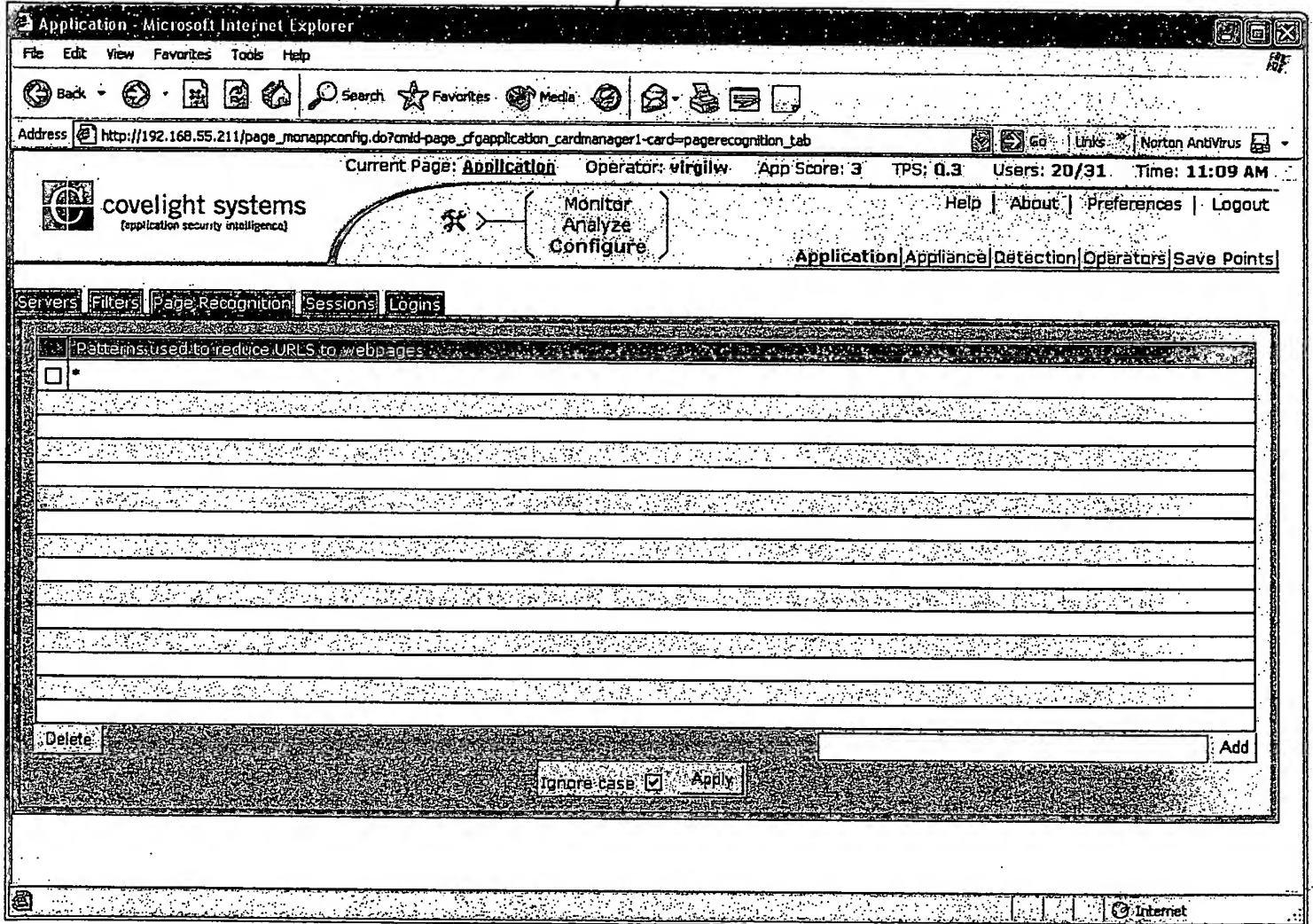


FIG. 59

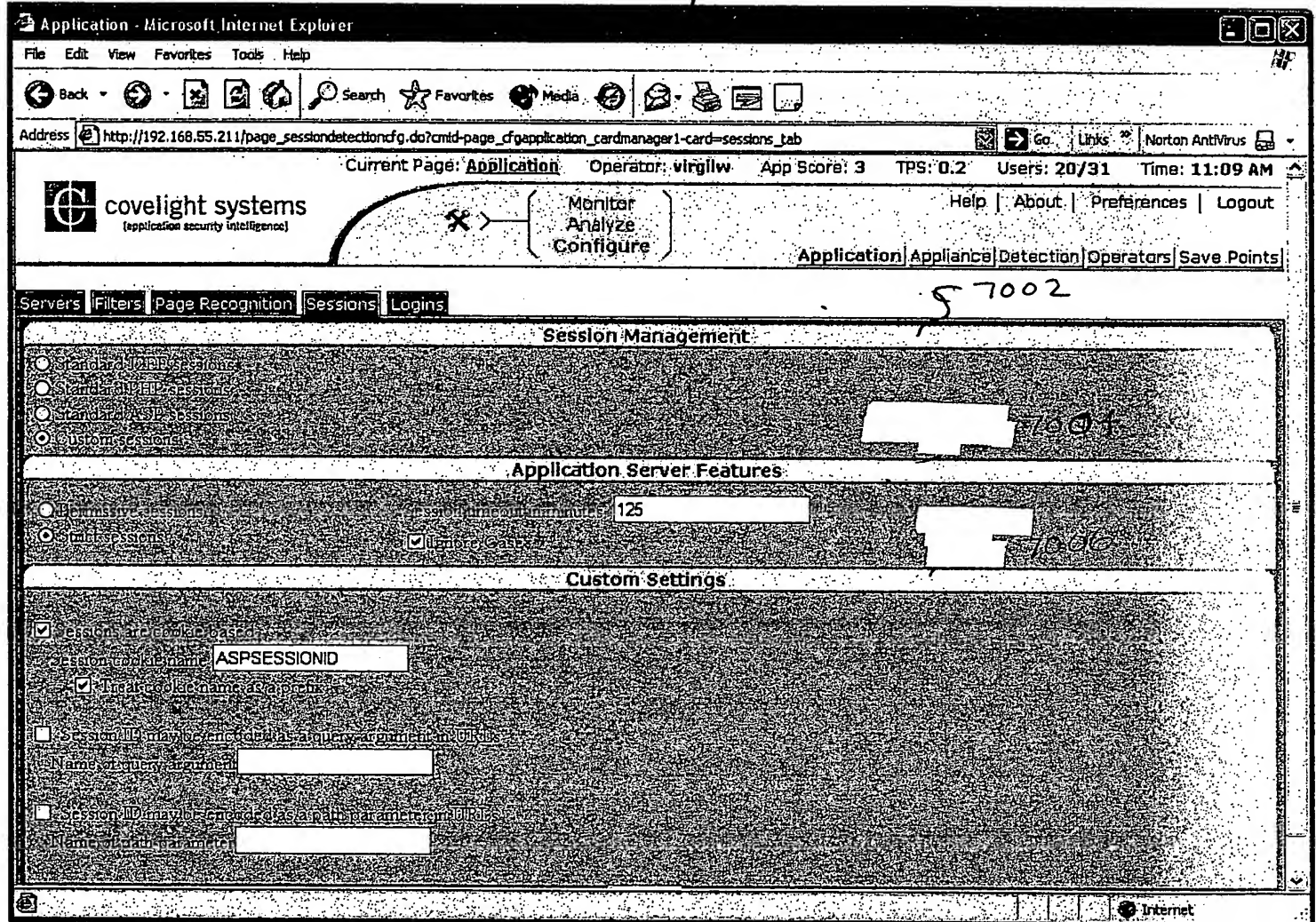


FIG. 60

6000

Application - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address http://192.168.55.211/page_logindetectioncfg.do?cmid-page_cfgapplication_cardmanager1-card-logins_tab

Current Page: Application Operator: virgilw App Score: 3 TPS: 0.2 Users: 20/31 Time: 11:10 AM

covelight systems
(application security intelligence)

Monitor Analyze Configure

Help About Preferences Logout

Application Appliance Detection Operators Save Points

Servers Filters Page Recognition Sessions Logins

Form Based Login Detection

☒ Form based login

☐ Use case sensitive matches

URL pattern of login action: */auth/login.asp?txtUsername=*&actionType=login

Form fields containing user ID: txtUsername

☐ Copied from defined

URL pattern of login action:

Form Based Login Result

☐ Successful login response contains the following HTML:

☐ All login response is successful and the following URL pattern:

☐ Failure response HTML contains the following text:

☐ Successful login response is a redirect to the following URL pattern:

☐ Successful response HTML contains the following text:

☐ Successful response contains the following text:

☐ Successful response contains the following text:

Update

Internet

6002

6004

FIG. 61

6100

6102

FIG. 63

6300

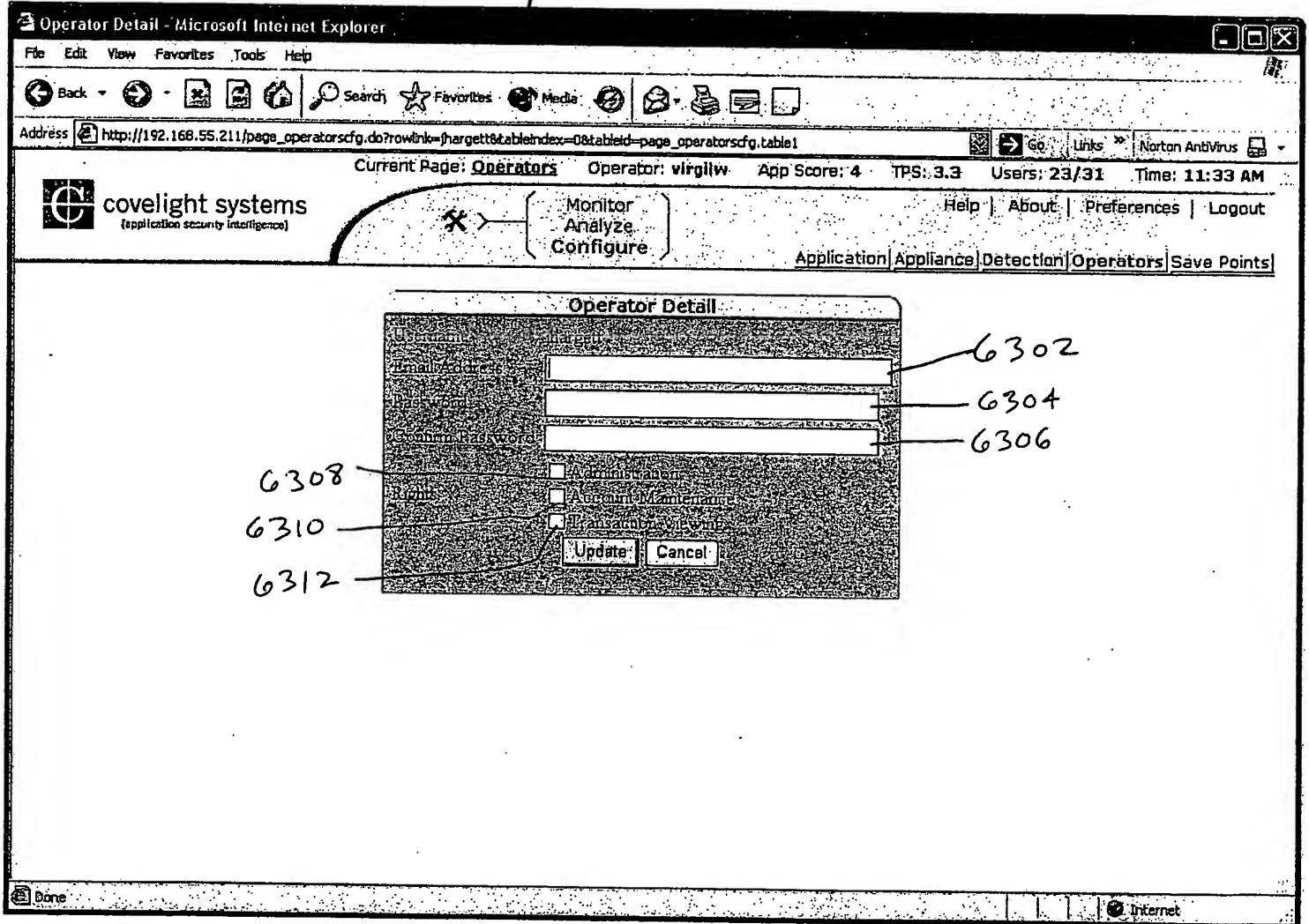


FIG. 64

6400


Operators - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Mail Print

Address http://192.168.55.211/page_mailstcfg.do?cmd=page_ofgoperators_cardmanager1-card-mailinglists_tab Go Links Norton AntiVirus

Current Page: **Operators** Operator: virgilw App Score: 4 TPS: 2.1 Users: 22/31 Time: 11:31 AM

 **covelight systems**
(application security intelligence)

Help | About | Preferences | Logout

Application | Appliance | Detection | **Operators** | Save Points

Accounts | Mailing Lists | Audit Log | Reports

Delete Selected Add

Mailing List	Operators in list	Included lists

Internet

6406) 6404)

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FIG. 65

6500

Operators - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print

Address http://192.168.55.211/page_operatorscfg.do?cmd=page_cfgoperators_cardmanager1-card=auditlog_tab

Current Page: Operators Operator: virgilw App Score: 4 TPS: 2.9 Users: 22/31 Time: 11:32 AM

covelight systems (application security intelligence)

Help | About | Preferences | Logout

Application | Appliance | Detection | Operators | Save Points

Accounts | Mailing Lists | Audit Log | Reports

Refresh

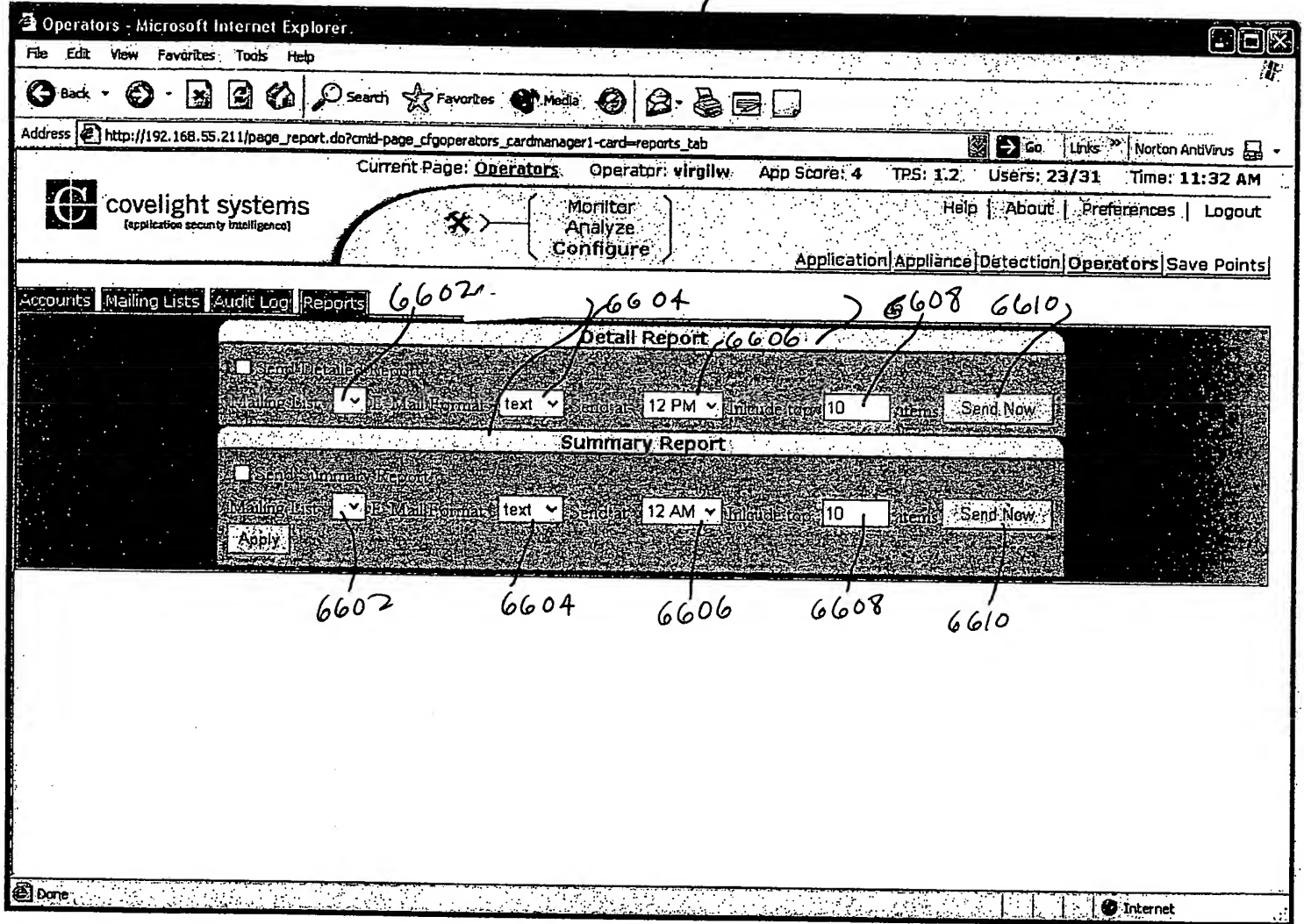
Export CSV Export XML

Date	Message	IP Address	Operator
1/16/04 11:28 AM	Login successful	192.168.55.101	virgilw
1/16/04 10:57 AM	Login successful	192.168.55.101	virgilw
1/16/04 10:11 AM	Changed operator virgilw refresh rate to 30	192.168.55.17	virgilw
1/16/04 10:11 AM	Changed operator virgilw refresh rate to 30	192.168.55.17	virgilw
1/16/04 9:30 AM	Login successful	192.168.55.17	virgilw
1/16/04 9:27 AM	Login successful	65.81.86.237	dmdurrett
1/16/04 9:26 AM	Login successful	192.168.55.17	virgilw
1/16/04 8:47 AM	Login successful	65.81.86.237	dmdurrett
1/16/04 8:47 AM	Logout successful	65.81.86.237	dmdurrett
1/16/04 8:17 AM	Login successful	65.81.86.237	dmdurrett
1/16/04 7:37 AM	Login successful	65.81.86.237	dmdurrett
1/15/04 7:34 PM	Login successful	192.168.55.101	virgilw
1/15/04 7:34 PM	Login denied for admin	192.168.55.101	?
1/15/04 7:14 PM	Login successful	192.168.55.101	virgilw
1/15/04 6:34 PM	Login successful	192.168.55.10	dmdurrett
1/15/04 6:04 PM	Login successful	69.132.60.166	thargett
1/15/04 5:46 PM	Login successful	65.81.86.237	admin
1/15/04 5:24 PM	Login successful	192.168.55.10	dmdurrett

Internet

FIG. 66

6600



Title: METHODS, SYSTEMS AND COMPUTER
PROGRAM PRODUCTS FOR
MONITORING USER BEHAVIOR FOR
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FIG. 67

6700

Detection - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media Mail Print

Address http://192.168.55.211/main.do?page=page_cfgdetection

Current Page: **Detection** Operator: virgilw App Score: 3 TPS: 0.1 Users: 20/31 Time: 11:02 AM

covelight systems
(application security intelligence)

Monitor Analyze Configure

Help | About | Preferences | Logout

Application | Appliance | **Detection** | Operators | Save Points

Detectors | Global Scoring Adjustment | Access Lists

Showing 11 of 43

Name	Category	Score	Status
Abnormal node error rate	Application Errors	10	Working
Abnormal session duration	Application Misuse	10	Learning
Abnormal user session duration	Application Misuse	10	Working
Application request rate too high	Usage Policy	70	Working
Consecutive login failures	Authentication	30	Working
Disallowed IP address	Access Policy	10	Disabled
Encoded 8-bit character	URL Encoding	5	Working
Excessive individual HTTP errors	HTTP Protocol	40	Working
Excessive login failures	Authentication	10	Learning
Excessive total HTTP errors	HTTP Protocol	40	Working
Flagged user login	Access Policy	50	Working
HTTP buffer overflow	HTTP Protocol	80	Working
HTTP parsing error	HTTP Protocol	80	Working
Invalid % character	URL Encoding	50	Working
Invalid HTTP request	HTTP Protocol	80	Working
Invalid URL encoding	URL Encoding	80	Working
Invalid UTF-8 sequence	URL Encoding	20	Working
Invalid use of %%	URL Encoding	60	Working

6702 6704 6706 6708

Internet

FIG. 68

6800

Detector Detail - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address http://192.168.55.211/page_detectors.do?rowlink=rate1%5C1&tableIndex=3&tableId=page_detectors_detectorTable

Current Page: **Detection / Detector Detail** Operator: virgilw App Score: 4 TPS: 0.4 Users: 23/31 Time: 11:37 AM

covelight systems
(application security intelligence)

Monitor Analyze Configure

Help | About | Preferences | Logout

Application | Appliance | **Detection** | Operators | Save Points

Detector Detail <Previous 4/43 Next>

Name	Application throughput (TPS) too high
Category	Usage Policy
Description	Detects when the overall rate of HTTP requests to the application is too high. The sensor takes samples of the transaction-per-second (TPS) throughput of the monitored application. When the value is higher than expected, it might suggest that an attack is progress or that
Status	Enabled
Event Link	Application throughput (TPS) is too high
Threat Score	70
E-mail Alerts	
Send E-mail Alerts	<input type="checkbox"/> (No distribution lists are defined)
Event Count Limit	1
Distribution List	
Detector Tuning	
Throughput Limit as transaction-per-second	1000
TPS	

Apply

Done Internet

6802

6804

6806

6808

6810

6812

FIG. 69

6900

Detection - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Reload Home Search Favorites Media

Address http://192.168.55.211/page_timescore.do?cmid-page_cfgdetection_cardmanager1-card-timescoring_tab Go Links Norton AntiVirus

Current Page: **Detection** Operator: **virgilw** App Score: 4 TPS: 2.6 Users: 23/31 Time: 11:29 AM

covelight systems
(application security intelligence)

Monitor Analyze Configure

Help | About | Preferences | Logout

Application | Appliance | **Detection** | Operators | Save Points

Detectors | **Global Scoring Adjustment** | Access Lists

6904 6906

Global Scoring Adjustment

From Day	From Hour	To Day	To Hour	Score Adjustment	Comment
<input type="checkbox"/> Monday	8 AM	Monday	8 PM	60%	Normal working hours - Monday
<input type="checkbox"/> Friday	9 PM	Sunday	7 AM	600%	No one should be working during these hours - dmp

6908 6910 6912 6914

6916

Delete From: Friday 6 PM To: Sunday 8 AM Adjustment %: 100 Comment:

Add Adjustment

6918

Internet

FIG. 70

7000

7006

7008

